

**United States Military Academy
West Point, New York 10996**

USMA Study of the Installation Management Agency CONUS Region Structure

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Study Lead

Lieutenant Colonel Tim Trainor, Ph.D.

Assistant Professor and Director, Engineering Management Program
Department of Systems Engineering

Senior Investigator

Gregory Parnell, Ph.D.

Professor, Department of Systems Engineering

Directed by

Lieutenant Colonel Michael J. Kwinn, Jr., Ph.D.

Director, Operations Research Center of Excellence

Approved by

Colonel Michael L. McGinnis, Ph.D.

Professor and Head, Department of Systems Engineering

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Executive Summary

Tasking

At the end of May 2004, the Acting Assistant Secretary of the Army for Installations and Environment (ASA(I&E)), Mr. Geoff Prosch, asked the United States Military Academy (USMA) for support in analyzing the structure of the Installation Management Agency (IMA). Specifically, the ASA(I&E) wanted an analysis of IMA's use of four regions to manage CONUS installations. The purpose of the USMA study was to evaluate the effectiveness and efficiency of the current structure and provide recommendations for potential alternative structures. The scope of this study was limited to an organizational review of the HQ IMA and Regions structure and does not extend to the execution of installation management functions at the garrison level.

Bottom Line

The bottom line recommendations from the study are:

- Retain the current four CONUS region structure.
- To achieve any needed manpower savings, reduce the number of personnel working resource analysis functions on the Region staffs.
- IMA needs to develop a transparent resource allocation process that will enable better communication between HQDA, HQ IMA, senior mission commanders and garrisons.

Study Methodology

The study methodology included conducting several stakeholder interviews, performing functional and comparative analyses, and developing a quantitative analysis model to evaluate the potential value added from various alternative organizational designs. The study evaluated eight different organizational design alternatives with the quantitative model to gain insights.

Stakeholder Analysis

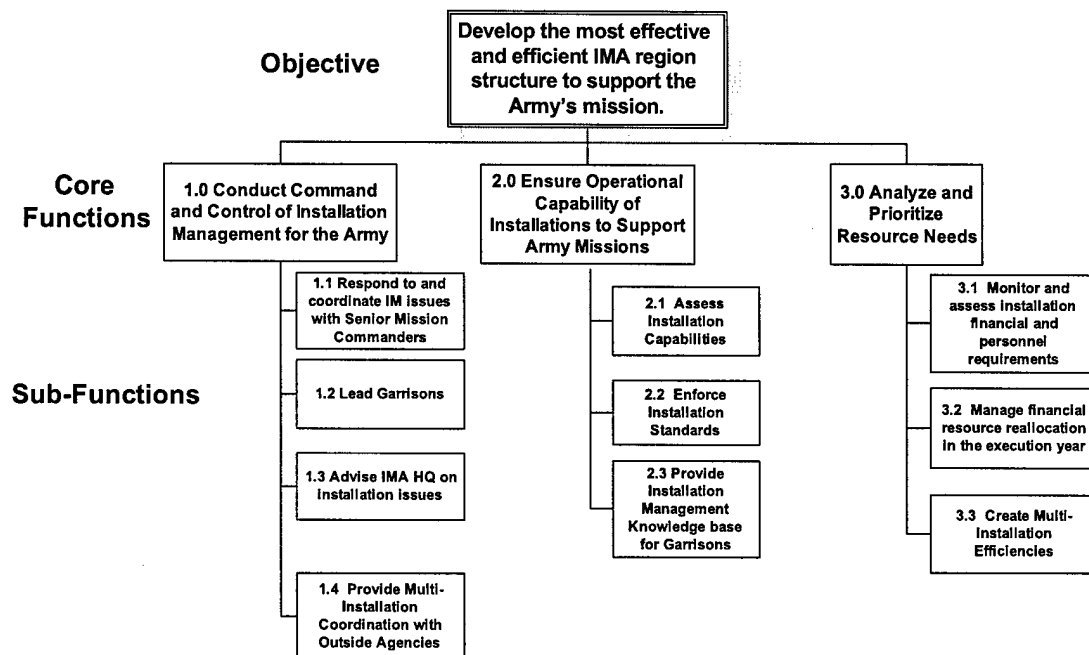
Stakeholder interviews of senior leaders from Garrison through HQDA level yielded these key points:

- Opinions from Senior HQDA leaders to Garrison Commanders vary widely on the current value added of the IMA Regions to the IM process, from positive to negative.
- IMA is a new organization implemented in a transforming Army at war and so it needs time to mature as an organization.
- Regions need to develop their staff expertise to accomplish their mission.
- IMA needs a transparent resource allocation process that will enable better communication for resource decisions from HQDA through installation level.
- There is concern over the need for a Region Headquarters that lacks resource decision-making authority.

- Senior leaders believe that policies concerning the movement and allocation of GWOT funding between Mission and BASEOPs accounts need review by HQDA.
- Installations are concerned that the rigid application of IMA policy and procedures without some flexibility to adapt to local needs and environment will decrease IM effectiveness and efficiency.

Function of Regions

This study focused on identifying the core functions that regions perform in IMA. The three core functions listed in priority order are: conduct command and control of installation management, ensure the operational capability of installations, and analyze and prioritize resource needs for installations. Each core function is further defined by 3-4 key sub-functions as depicted below.



This functional analysis was validated through comparison with the IMA Region METL, the proposed FY05 Region TDA, and the HQDA organization and operations (O&O) documentation that was developed during the Transformation of Installation Management (TIM) process. These three functions were reinforced as the 'core' functions through the stakeholder interviews and research of the IMA organization.

Analysis of Alternatives

The team developed a quantitative model to evaluate how well several alternative designs for an IMA Region organization could potentially fulfill the core functions of a Region. The key results of this analysis include:

- If the IMA CONUS Regions continue to perform all three core functions, i.e. C2, Assessment, and Resource Analysis with the current authorized strength, then the potential value added of a 5-Region structure approximately equals that of the current 4-Region structure. The potential value added of the 4-Region structure is more than a 3-Region structure, which is significantly more than that of a 2-Region structure.
- If the regions only perform the command and control core function, this could be done with about 50 people centralized with the IMA HQ in DC.
- If the regions perform only the C2 and Assessment core functions, this can be done with an approximate 30% saving in authorized manpower while yielding a 10% decrement in potential value.

The study team believes IMA could significantly benefit from continued focus in these areas:

- Review the resource allocation decision-making AND communication process to ensure they are transparent and open to all concern constituencies.
- A detailed business processes review incorporating a review of information technology requirements and capabilities.

Acknowledgements

The USMA study team consisted of the following:

- LTC Tim Trainor, Ph.D., Department of Systems Engineering
- Greg Parnell, Ph.D., Department of Systems Engineering
- LTC Brigitte Kwinn, Department of Systems Engineering
- Ms. Robin Burk, Department of Systems Engineering
- MAJ John Brence, Ph.D., Department of Systems Engineering
- CPT Jason Wolter, Department of Systems Engineering
- MAJ John Harris, Department of Systems Engineering
- CPT Eric Tollefson, Department of Systems Engineering
- CPT Wiley Rittenhouse, Department of Mathematical Sciences
- MAJ Pat Downes, Department of Systems Engineering
- LTC Bill Bland, Ph.D., Department of Systems Engineering
- LTC Mike Kwinn, Ph.D., Department of Systems Engineering
- COL Bill Klimack, Ph.D., Department of Systems Engineering
- COL Rocky Gay, Ph.D., formerly of the Department of Systems Engineering
- MAJ Grant Martin, Department of Systems Engineering
- LTC Ken McDonald, Department of Geography and Environmental Engineering
- Bobbie L. Foote, Ph.D., Department of Systems Engineering

The USMA study team would like to thank the many Garrison Commanders, Installation Commanders, IMA Region Directors and staff, HQ IMA leaders and staff, and HQDA leaders that provided their time and expertise in this effort.

Disclaimer

The views expressed in this report are those of the authors, and/or stakeholders interviewed, and do not reflect the official policy or position of the Department of the Army, Department of Defense, or the U.S. Government.

Questions

Questions regarding this study should be directed to Lieutenant Colonel Tim Trainor, Department of Systems Engineering, United States Military Academy, West Point, New York, 10996; (845) 938-5534, DSN 688-5534, timothy.trainor@usma.edu .

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Chapter 1. Problem Definition

1.1 Study Mission Statement.

The Army and Navy are both facing pressure from Congress to justify the centralization of installation management functions. In the report from the Senate Armed Services Committee on the National Defense Authorization Act for Fiscal Year 2005, Congressional leaders directed the Army and Navy to report back on concerns with the centralization of installation management:

“In October 2002, the Secretary of the Army activated the Installation Management Agency (IMA) within the Department of the Army to be solely responsible for management of all Army Active and Reserve installations world wide. The goal of the program was to ensure a standard and equitable delivery of services and resources to each installation, while reducing overhead costs and redundant installation support activities. The IMA is charged with establishing facility base operations support requirements, advocating for resources within the Department of the Army, and funding facility projects and base operations support accounts annually to satisfy requirements. The Secretary of the Navy established a similar organization under the Commander, Navy Installations (CNI), in October 2003.

The committee is concerned that the process for resource allocation by these centrally managed agencies is continuing to result in chronic under funding of facility sustainment and base operating accounts. The ability of installation commanders to respond to urgent mission and facility requirements by quickly reallocating funds at the installation level has been curtailed in favor of a centrally managed decision-making process. Installations that require a higher degree of resource allocation due to their unique mission, such as the U.S. Military Academy and the U.S. Naval Academy, are now competing for resources with dissimilar installations.

Therefore, the committee directs the Secretaries of the Army and Navy each to submit a report to the committee by February 1, 2005 that describes:

- (1) the resource allocation and prioritization process for the disbursement of funds to each installation;
- (2) the consideration of the impact of an installation's mission to each Service's overall mission;
- (3) the considerations given to the facility and base operating support requirements for installations with unique missions or substantially greater requirements;
- (4) the authority granted to installation commanders to quickly reallocate local funds to carry out urgent facility and installation support requirements; and
- (5) a comparison and assessment by each major installation of the amount obligated for base operating support and facility sustainment accounts in fiscal years 2003 and 2004.”¹

At the end of May 2004, the Acting Assistant Secretary of the Army for Installations and Environment (ASA(I&E)), Mr. Geoff Prosch, asked the United States Military Academy (USMA) for support in analyzing the structure of the Installation Management Agency (IMA). Specifically, the ASA(I&E) wanted an analysis of IMA's use of four regions to manage CONUS installations.

During an interview of Mr. Prosch and MG Lust, the Assistant Chief of Staff for Installation Management (ACSIM), on 10 June 2004, Mr. Prosch stated that the motivation for this study was that budget 'woes' put pressure on justifying the manpower and cost of maintaining the IMA region structure. Also, the current region organization was created by "happenstance and compromise". Based on these factors, Mr. Prosch asked for an independent evaluation of IMA's CONUS regions management organization that he could use in reporting to the Installation Management Board of Directors (IMBOD) at their next meeting in Oct 2004.

The Department of Systems Engineering (DSE) at USMA was given the task to conduct this study. The ASA(I&E) asked for the study out-brief on 13 August 2004 since he was going to be at USMA on that date for another event. After conducting a brief mission analysis, the DSE team arrived at this mission statement to guide the study effort:

Task: Conduct an organizational analysis of the IMA CONUS region structure for the ASA(I&E) and the ACSIM NLT 13 Aug 2004.

Purpose: To evaluate the effectiveness and efficiency of the current structure and provide recommendations for potential alternative structures.

During an in-progress-review in July 2004, the ASA(I&E) and ACSIM both affirmed this mission statement for the study. Chapter 2 of this report provides an overview of the study methodology employed by DSE to meet this mission.

The scope of this study was limited to the organization and function of the four CONUS regions used by IMA and does not extend to the organization for installation management at the garrison level. After several of the stakeholder interviews and initial research were completed, the team determined the primary objective of the study as follows:

'Develop the most effective and efficient IMA region structure to support the Army's mission'.

1.2 Background of IMA Development.

The Army undertook a transformation of installation management (TIM) process as part of the larger transformation effort. The 2003 United States Army Posture Statement describes the TIM rationale:

"Recognizing the requirement to enhance support to commanders, the Secretary of the Army directed the reorganization of the Army's management structure. On

The USMA study team identified the planning guidelines followed in developing the IMA organizational structure through interviews with the Division Chiefs at Headquarters, IMA. The initial planning guideline IMA followed was to develop a geographically dispersed management structure because they believed a fully centralized process located in the National Capital Region would not be responsive to the installations. The planning process followed basically this framework:

1. Step One was to determine the geographic boundaries for the regions. The federal government divides CONUS up into 10 standard regions for various governmental agencies / functions. The IMA planning team believed a structure lining up with these regional boundaries would be more efficient than one that did not.
2. Step Two was to determine the number of regions. Within CONUS, the overriding decision criterion for the boundaries was to balance the number of installations across the regions. Based on the previous span of control of the MACOMs with respect to installations they controlled, IMA determined that a region could supervise 20-25 installations. Since Army Material Command (AMC), National Guard and US Army Reserve (USAR) installations were not going to be under IMA's control initially, this equated to about 4-5 regions in CONUS. The region boundaries were then determined to generally meet this installation allocation while following current federal region boundaries.
3. Step Three was to determine where the region headquarters (HQs) would be. This decision was based primarily on the availability of personnel trained in installation management functions. That led directly to standing up HQs at Fort McPherson (home of FORSCOM) and Fort Monroe (home of TRADOC). Out west, Fort Sam Houston in San Antonio was picked because MEDCOM had the infrastructure and some staff (not necessarily trained in installation management) to support the region HQ. AMC had a field operating agency at Rock Island Arsenal that had some installation management experience. Also, they had the infrastructure to support the region HQ. However, the IMA region staffs at both Rock Island Arsenal and San Antonio basically had to be built from scratch due to lack of personnel with installation management experience at these HQs.

This planning process led to the region structure depicted in Figure 1.1.

1.3 Direction from the ASA(I&E) and the ACSIM.

During the initial interview of Mr. Prosch and MG Lust on 10 June 2004, they provided guidance for specific issues to explore in the study. Most are addressed in this report:

- Are the region boundaries right?
- Assess the effectiveness and efficiency of the current regions.
- Discuss the impact of technology on the number of regions.
- Assess the impact of adding National Guard installations and Reserve Centers under the umbrella of IMA control.

- If BRAC 2005 closes installations with region HQs, where should these region HQs be located, if we still recommend they exist?
- Is four the right number of regions?
- Are the region HQ locations correct? What should they be?
- Assess the impact of Human Resources Command (HRC) functionally overlapping with IMA in terms of responsibilities for personnel services.
- Articulate the savings in dollars and improvement in efficiency from any recommended changes in region boundaries.
- As we go and visit Regional HQs and Garrisons, gather and report back on any particular efficiencies / inefficiencies observed (i.e. be an unbiased, independent set of eyes).
- In terms of span of control, how many installations can region HQs handle? How do improvements in information technology affect this number?
- Ask the regional directors what they think their functions are.
- Analyze the IMA regional boundaries and inter-related functions of HRC, NETCOM, FEMA, Army Contracting Agency, EPA and the CONUSAs.
- Go see the Garrison Commanders at Forts Hood and Bragg; they are what 'right looks like'.

The study addresses many of these issues, but focuses primarily on identifying the key functions that the IMA Regions should perform, and the best organizational structure in terms of the number, location and size of regions to perform these functions. The next chapter provides an overview of the study methodology.

Chapter 2. Overview of the Study Methodology

To perform this study within a two-month period, the DSE study team developed the study plan discussed here. Figure 2.1 provides a snapshot of the methodology.

Study Methodology

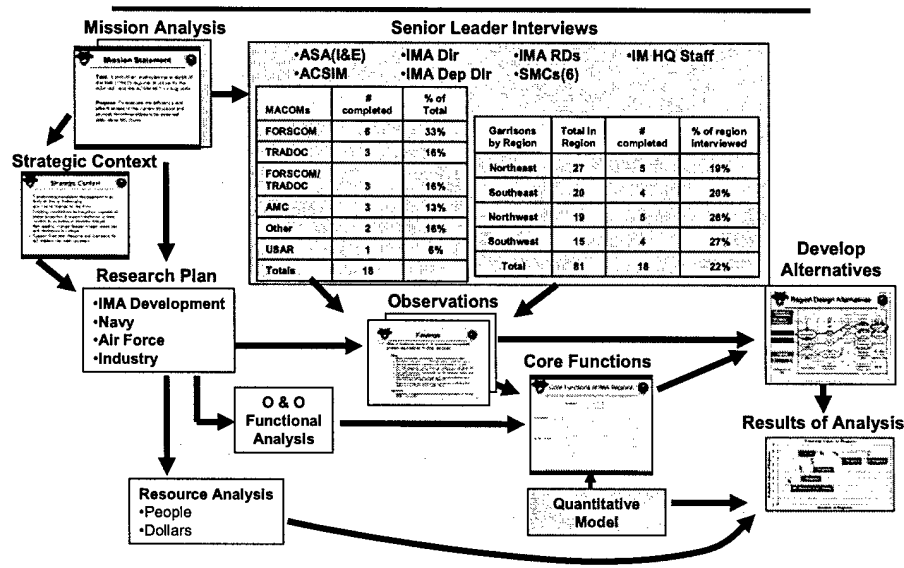


Figure 2.1: Overview of Study Methodology

Upon completing a mission analysis and determining the study mission statement, the study was focused on these major areas:

- Senior Leader Interviews and Stakeholder Analysis (Chapter 3)
- Comparative Research and Analysis (Chapter 4)
- Functional Analysis and Core Function Development (Chapter 5)
- Generating Alternative Organizational Structures (Chapter 6)
- Quantitative Modeling to Comparing Alternative Structures (Chapter 7).

The team interviewed several leaders at HQDA, HQ IMA, IMA Region and installation level to gain their perspectives on the functions and organization of IMA regions. The team also researched comparative organizations in the Navy and Air Force to gain insights. The team also looked at factors leading civilian industry to regionalize their operations geographically and gathered lessons learned from industry that could be applied to IMA's regionalization.

Much of the study focused on determining the core functions that the IMA Regions need to perform because the organizational structure should be designed primarily to support accomplishment of these key functions. The team identified the functions through the stakeholder interviews, research on IMA, and analysis of the HQDA organization and operations (O&O) documentation that was developed during the Transformation of Installation Management (TIM) process. The team also studied the allocation of personnel slots in the Region HQs to determine what functions were performed by the organization. From this analysis, the team developed a hierarchical structure to represent the key functions of the regions. This hierarchy was validated through comparison with the IMA Region METL, the proposed FY05 Region personnel table of distribution and allowances (TDA), and the HQDA O&O documents. The hierarchy was also approved by the ASA(I&E) and ACSIM during an IPR.

Once the key functions were defined, the team developed alternative organizational structures that could perform these functions. These alternatives were built using key dimensions of organizational design that were varied across a spectrum of possible values to arrive at a set of unique design alternatives. These alternatives were compared based upon their possible value-added in performing the core functions of a region.

The study team applied decision analysis (Kirkwood, 1997) techniques to develop a model to quantify the value-added of various region alternatives in meeting the core functions. This included developing objectives for each key function, and measures to quantify how well each objective is met by the alternative design. These measures, objectives, and functions were also weighted to capture their relative importance in the Region organizational design. This decision analysis process resulted in a model for quantifying the value-added from various region design alternatives.

The team collected data from various sources and built a detailed MS EXCEL[®] spreadsheet model to provide a means for scoring how well a design alternative met each of the measures. Each alternative was evaluated and scored with this model to determine its value-added. The design alternatives were then compared based on their 'value-added' versus the alternative 'cost' in terms of manpower for the Region HQ.

The results and conclusions of the study were based on insights gained from this quantitative analysis and the information learned through the stakeholder interviews and background research.

Chapter 3. Stakeholder Analysis

3.1 Overview.

In order to gain a clear understanding of the problem, we needed to conduct research and interview all of the relevant stakeholders to determine their needs and objectives. We refer to these people, or groups of people, as stakeholders because typically they have a vested interest, or stake, in the problem and/or its eventual solution. The primary purpose of stakeholder analysis is to identify the people who are relevant to the problem and, more importantly, to determine their needs, wants and desires.

We conducted thirty five interviews all over the continental United States. We conducted eight interviews of the leaders and staff from the primary installation management agencies, to include the ASA(I&E), the ACSIM, the IMA Director and several key IMA staff members.

We interviewed all four Region Directors and select Region staff. We also surveyed the Region Directors to define the key factors impacting their span of control.

We also interviewed eighteen different garrison commanders representing 22% of the total direct report garrisons in CONUS (Table 3.1). The garrisons were selected to ensure that each region and major command was represented, to include US Army Reserve (Table 3.2).

Table 3.1: Region Interview Summary

Direct Report Garrisons by Region	Total in Region	Interviews complete	% of region interviewed
Northeast	27	5	19%
Southeast	20	4	20%
Northwest	19	5	26%
Southwest	15	4	27%
Total	81	18	22%

Table 3.2: MACOM Interview Summary

MACOMs	Interviews Conducted	% of Total Conducted
FORSCOM	6	33%
TRADOC	3	16%
FORSCOM/TRADOC	3	16%
AMC	2	13%
Other	3	16%
USAR	1	6%
Total	18	100%

After the initial round of interviews, we were directed to interview some Senior Mission Commanders (SMCs) and Installation Commanders (ICs). We interviewed four SMC/ICs personally, and two colonels were designated to provide their SMC/IC views. The interviewed SMC/ICs also represented different regions and major commands.

Table 3.3: Senior Mission/Installation Commander Summary

NAME	POSITION	LOCATION
LTG Lennox	Superintendent, USMA	West Point, NY
LTG Soriano	CG, I Corps	FT Lewis, WA
LTG Clark (COL Annen) *	CG, 5th CONUSA CoS	FT Sam Houston, TX
LTG Kensinger (COL Koenig) *	CG, USASOC Deputy CoS, Eng	FT Bragg, NC
MG Webster	CG, 3ID	FT Stewart, GA
MG Wilson	CG, 7ID	FT Carson, CO

*Colonels designated to provide SMC/IC views

The following sections provide a summary of the comments binned into issue areas that were addressed multiple times during the interviews.

3.2 Summary of Input from Region Directors.

All four Region Directors were interviewed. The primary purpose of the Region Director interviews was to determine the functions and roles of the region and Region Director. We also needed to understand from the Region Directors' viewpoint the benefits provided the Army by a regional structure.

All four Region Directors reported that coordinating Installation Management (IM) issues with Senior Mission and Installation Commanders in the region was a primary function of the Region Director.

Region Directors understand that oversight is one of their primary functions. Three quotes illustrate this understanding:

Regions provide “corporate [IMA] enforcement of standards by inspecting, assessing and assisting installations in performing IM functions so they maintain operational capability”.

“IMA provides oversight and guidance to the garrisons in the areas of Morale, Welfare and Recreation (MWR), family housing, environmental standards and force protection.”

“The regional structure allows for the effective assessment of Army installation capabilities.”

Initially we received information that Region Directors were directed to physically visit all their direct-report installations once per quarter, and all other assigned installations annually. To assess the feasibility of this, we performed a travel analysis to assess the impact from this guidance. Figure 3.1 shows that Region Directors would be on the road for more than 30% of the year just to meet this guidance, not accounting for any other trips. In reality, many of these ‘visits’ are conducted via video teleconference due to time constraints.

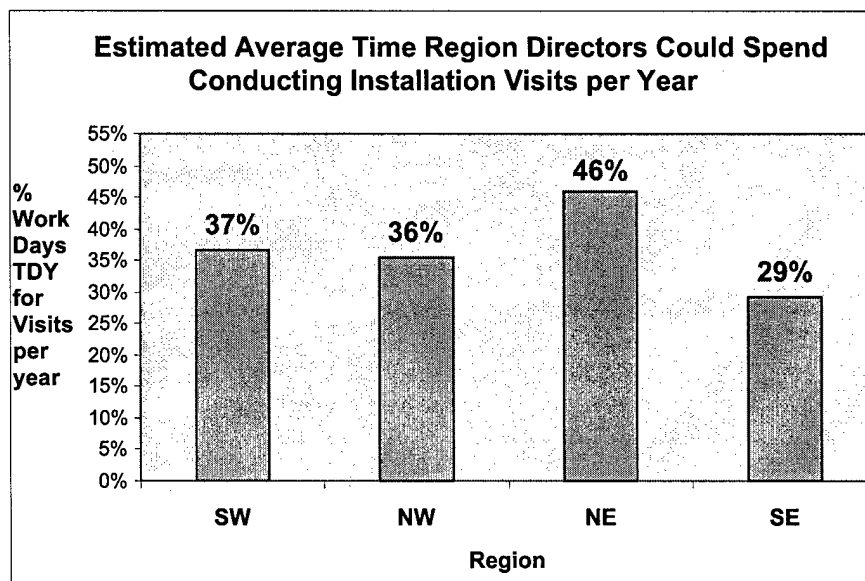


Figure 3.1: Estimated Travel Time for Installation Visits

Region Directors did report some difficulties in working within the Army’s organizational structure for IM. Three out of four Region Directors reported challenges in working within the current command and control structure since the Region Director is a junior SES and typically must coordinate IM issues with 2 and 3 star SMC/ICs. Three

out of four of the Region Directors also reported that the current command and control structure creates frustration and additional work for Garrison Commanders

3.3 Summary of Input from HQ IMA and HQDA.

The following leaders and staff from the primary installation management agencies, to include the ASA(I&E), the ACSIM Director, the IMA Director and several key IMA staff members were interviewed.

Table 3.4: Installation Management Senior Leader Interviews

Who	Position
Mr. Prosch	ASA(I&E)
MG Lust	Director, ACSIM
Ms. Menig	Deputy Director, ACSIM
MG Aadland	Director, IMA
Mr. Sakowitz	Assistant Director, IMA
Mr. Richard Courtney	Director of Manpower Management, IMA
IMA Division Chiefs	HQ IMA Staff

Senior IM leaders report that the main function of the Region Director is to coordinate Installation Management (IM) issues with Senior Mission and Installation Commanders in the region. However, many of these stakeholders also emphasized the role of the Region Director and staff in understanding and articulating installation issues to HQ IMA. Regions should also assess installation needs, enforce HQDA standards and be the primary knowledge base for garrisons in addressing IM issues. These leaders also believed the Regions play a major role in validating installation resource needs.

The information addressed in Chapter 1 regarding the background and purpose for the study, along with the history of development of the current IMA structure was also gathered during interviews with these senior leaders.

3.4 Summary of Input from Senior Commanders.

The comments from the SMC/ICs were grouped into two categories: comments about the region and comments about IMA.

3.4.1 Comments about the regions:

Some SMC/ICs see value added from IMA regions:

- "IMA organization is overall responsive and value added to the Army..... the Region Director role is one of honest broker, resource equity manager, and supporter of SMC/ICs."
- "If there is an IMA, then there should be a regional structure. It is helpful to have a Region Director here."

- "IMA regions add value in the areas of standards, resourcing, and oversight, but there are problems with execution and policy."

SMC/ICs said that Regions lack decision making authority and are viewed as a redundant layer.

- "Not sure if we need additional HQs without authority; regions right now are not much more than a pass-through."
- "The directives we get are not coming from region, but from IMA HQ. Why is another HQ needed in the age of easy information transfer and communication?"
- "We must go through regions, which means nothing except they pass it (our request) up... They are a drag... They don't add value... Region is a comms node for IMA. It only relays."

SMC/ICs said that Region staffs need to improve expertise and responsiveness.

- "The lack of seniority in the IMA staffs is an issue, but only time and experience for the IMA staff will correct this situation. We should give IMA time to mature and grow as an organization and they will help the Army in its goal of better stewardship of resources."
- "Regions are responsive when badgered. This unresponsiveness is attributed to some confusion at the region level as to which person has responsibility for each task."
- "There are challenges when forming a new organization. There are credibility issues with a young SES who must deal with 2 and 3 star commanders."

3.4.2 Comments about IMA:

SMC/ICs believe the coordination and communication processes for IM issues between HQDA, HQ IMA, MACOMs and the installations need to improve.

- "Right now, the situation seems like IMA side versus mission side. This is divisive and too painful for an army during time of war. We need to look higher than just the regional structure for solutions."
- "Current system looks more like our two-party (Democrat/Republican) political system. MACOM X won't talk to IMA and vice versa. Communication is terrible and it impacts the mission."
- "Power Projection Platform garrison commanders say there is a leadership void. They must face the senior mission commander and still answer to region directors."

Some SMC/ICs believe that rigid enforcement of standardization policies by HQ IMA limits garrison flexibility and hurts overall execution of installation management.

- "Standard structure is ludicrous [with respect to the standards imposed on installations]; Give some flexibility."
- "Too much guidance is coming from IMA HQ. For example, the grass cutting edict. IMA is not close to the pulse of the installations. The effort to standardize installations (cookie-cutter approach) is responsible for many of the problems."

- "The standardized garrison staff structure could cause problems for large installations or small installations."

SMC/ICs are concerned with delays caused by centralization of garrison personnel actions at IMA.

- "I can manage the installation with the garrison commander quite well. IMA processes are making this harder."
- "We put double the amount of time on staff work since IMA's inception."
- "IMA structure is not set up to support installations and tenant units."
- "Commanders are now spending as much or more time on the same admin issues that IMA was supposed to alleviate."

SMC/ICs believe there is confusion over the GWOT policies regarding the spending of mission funding vs. BASEOPs funding.

- [There is] "Confusion at policy level on what constitutes BASEOPS versus mission funds."
- "Policy about movement of funds (mission to BASEOPS) is shortsighted; should be sorted out at the DA policy level."
- "DA didn't allocate enough GWOT \$ through IMA."
- "The bureaucracy created by IMA separates post staff and post security. For GWOT, you can't cross SRM and BASEOPs dollars with mission dollars."

3.5 Summary of Input from Garrisons.

The purpose of the interviews of the eighteen Garrison Commanders was to determine the roles and functions the Regions were fulfilling in the IMA organizational structure. Several Garrison Commanders reported that the main function of the Region Director is to coordinate Installation Management (IM) issues with Senior Mission and Installation Commanders (SMC/ICs) in the region. A few Garrison Commanders report little interaction between Region Director and SMC/ICs.

- 'The Region Director's headquarters is close to my installation, but the RD has only visited the installation three times for a total of six-eight hours combined since the Region's inception.'

Several Garrison Commanders understand that oversight is one of the Region's primary functions.

- "The critical role [of the Region Director] is oversight."
- "The oversight the Regions provide is valuable but not necessary".

Garrison Commanders reported challenges in working within the current command and control structure.

- Some Garrison CDRs say the Region Director needs more decision making authority to be effective.

- "Region director is not equal to the SMC/IC, Region Director is a SES 1-star equivalent, Garrison Commander is a COL/LTC and the SMC/IC is a 2-star. Right now the SMC/IC peer is the IMA director, this needs to be different".
- Several Garrison Commanders reported that the current command and control structure creates frustration and additional work for Garrison Commanders.
- Garrison Commanders reported concerns with being rated by a Region Director they do not see often.

Some Garrison Commanders believe the IMA Regions lack the background and expertise to effectively assist their installations.

- "Region Directors should be individuals that have experience as Garrison Commanders. This will provide real value and offer the organization outstanding knowledge management."
- "The personnel at the region headquarters have little or no experience running garrisons and even less with power projection or Army specific issues."
- "Staff expertise at the regions is not equitably distributed. Region [X] staff lacks expertise in force structure as an example. Garrison staff members find that they have to go to other sources of expertise, maintain dual lines of communication to insure they get needed information"

Some Garrison Commanders do not see the efficiencies gained by the IMA corporate management structure.

- Several Garrison Commanders report difficulties and inefficiencies that will be created by implementing the Standard Garrison Organization (need room for flexibility to adapt to mission).
- Several Garrison Commanders and a MACOM leader report that taskers just pass through the region staff with little to no staff analysis done.
- "The Region Headquarters has a robust staff, but the staff only burdens the garrison staff with numerous data requests and offers zero support."
- "IMA tasks the Garrison too much. Since OCT 04, IMA and/or the Region has tasked Ft X 670 times."

There is a reported lack of communication (feedback) of budgetary rationale made by IMA to the Installation level.

- Four Garrison Commanders cited unexplained changes in funding levels.
- "Budget reduced by \$24 million due to Region HQ with zero justification".
- "Region has no apparent impact on funding decisions".

Garrison Commanders report that Senior Mission / Installation Commanders want the flexibility to move funds from mission accounts to Baseops accounts.

- Garrison Commander's wanted more ability to transfer funds from mission to IMA accounts
- Garrison Commanders reported cases in which the installation would benefit from transferring GWOT / CONOPS / Mission funds to Baseops.

3.6 Conclusions from Stakeholder Analysis.

Based on the stakeholder interviews, we can draw these general conclusions:

- Opinions from Senior HQDA leaders to Garrison Commanders vary widely on the current value added of the IMA Regions to the IM process, from positive to negative.
- IMA is a new organization implemented in a transforming Army at war and so it needs time to mature as an organization.
- Regions need to develop their staff expertise to accomplish their mission.
- IMA needs a transparent resource allocation process that will enable better communication for resource decisions from HQDA through installation level.
- There is concern over the need for a Region Headquarters that lacks resource decision-making authority.
- Policies concerning the movement and allocation of GWOT funding between Mission and BASEOPs accounts needs review by HQDA.
- Installations are concerned that the rigid application of IMA policy and procedures without some flexibility to adapt to local needs and environment will decrease IM effectiveness and efficiency.
- The Army is experiencing some difficulties with the current command and control structure for IM, however this is expected in any major organizational change that significantly impacts the resource decision making process.

Much of this study is focused on identifying the critical functions performed by the regions. From these interviews, it is apparent that senior leaders and Region Directors understand that the core functions of the IMA regions are:

- To provide command and control for installation management;
- To ensure installation operational capability; and
- To analyze and prioritize installation resource needs.

Chapter 4. Comparative Analysis

4.1 Overview.

In addition to meeting with IMA stakeholders, the DSE team identified and studied several organizations which must perform functions similar in type and scope to those of IMA. When comparing IMA's current organizational structure with those of similar organizations, we are primarily interested in answering the following questions:

- To what degree and in what ways do equivalent organizations regionalize the management of installation management services?
- For what purpose do they do so?
- In what ways do they capture cost reductions and other efficiencies as a result of regionalizing their installation services?

Based on the information gathered from the IMA stakeholders, we identified the following organizations and industries for our comparisons:

- The US Navy and the US Air Force
- Hotel chains with significant geographical scope, and
- Warehousing and logistical service companies

4.2 Installation Management in the Air Force.

As Figure 4.1 shows, there are several salient differences in the ways that the military services organize installation management. These differences are due to different missions and the relative maturity or immaturity of the current IM organization.

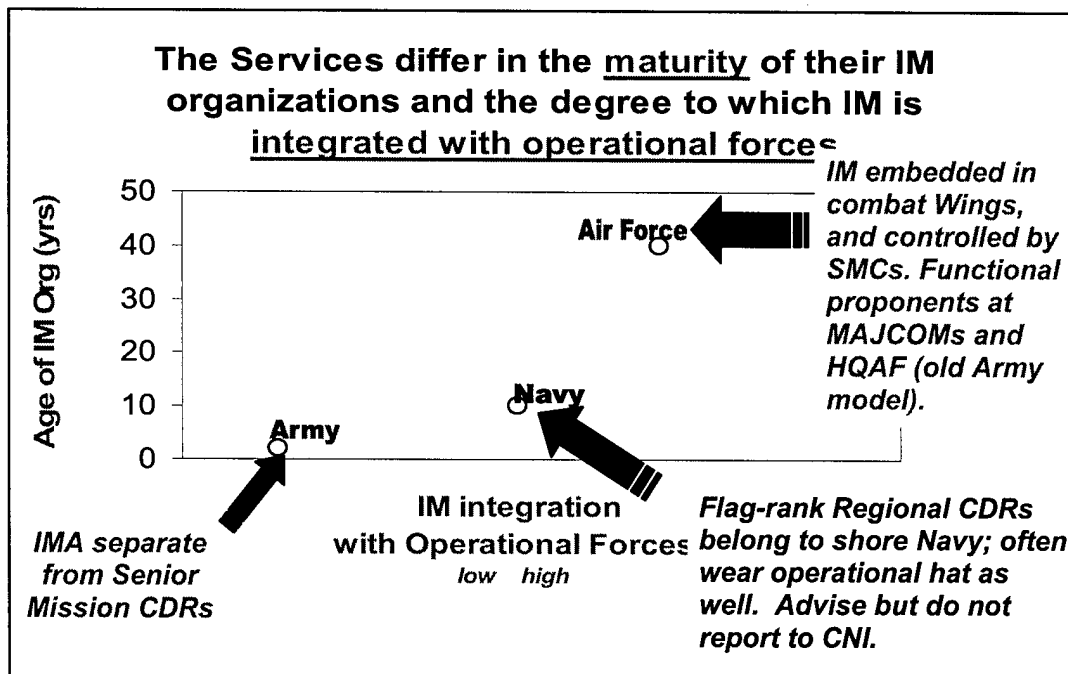


Figure 4.1: DoD IMA Age and Operational Integration Comparison

The standard organizational structure for all USAF bases is the Combat Wing. The Wing Commander is both senior operational commander and also installation commander of the Wing's base. USAF IM personnel are in the operational chain of command at all levels. IM functional commanders report to combat Wing commanders through the Wing mission support group. The Air Force uses the term "combat support" (CS) synonymously with "installation management" to emphasize that combat wings are deployable units who often recreate installations (airfields) as part of combat operations. CS functions include transportation, supply, fuels and logistics planning.

All USAF CS personnel are uniformed military personnel tasked against deployable wartime positions and as much as possible, CS forces deploy with the combat unit they support in peacetime. MAJCOM and HQ AF personnel provide function-specific IM expertise, but the Wing combat support personnel do not report to them.⁵

4.3 Installation Management in the Navy.

There are 16 Naval regions (10 CONUS, including a Washington Area region) and a central command for installation management. Although the Installation Command was established as recently as October 2003, the Navy has gradually consolidated IM-related functions at the regional level since 1994. The Commander, Installation Command (CNI) reports to the Chief of Naval Operations; regional commanders report

ADCON (administrative control) to the CNI. The CNI is dual-hatted in the operational chain of command.

Regional commanders are also in theory, and often in significant practice, dual-hatted as well, in accordance with the Navy's well-established principle of dual-reporting through operational and administrative chains. Regional IM functions include ship repair and overhaul and port services for the fleets.

CNI presents consolidated budget requests and allocates funds to the regional commanders, who in turn allocate funds among the installations under their control. Typical span of control seems to be about 11-13 installations per regional commander

Navy IM regions align with previously existing geographical command areas. The Southwest Region (San Diego area) serves as a test-bed for regionalization practices. Other regions are adopting best practices at differing paces.

The Navy's Southwest Region has aggressively sought to identify and adopt best practices from the corporate world, retaining KMPG Peat Marwick to coordinate an extensive Business Process Re-engineering study. This BPR study began with a 'blank sheet of paper' approach in which regional personnel and the operational units they support identified the desired IM service model the region wished to adopt. As a key part of this process, the region established detailed goals, critical success factors, performance measures and technical requirements for each IM function. Alternative process approaches were then identified and evaluated prior to the selection and implementation of the new IM service model for the region.

The Southwest region provides seed money for information systems and other investments needed to implement the new IM delivery model, both at the regional and the installation level. All investments must save at least twice the invested funds within 2 years and all IT systems must collect detailed performance data at the installation, regional and Navy-wide levels.

In combination with the region's detailed performance metrics, these systems allow the Navy to project efficiency savings in great detail and report expected vs. actual savings on an initiative-by-initiative basis. Performance results are published annually in the CNI's "Shareholder's Report".⁶

4.4 Insights from Industry Regionalization.

Corporations differ substantially in their organization structures, depending both on the industry / market sector in which they operate and also as a result of corporate competitive strategy. (Compare, for instance, the heavily centralized distribution / dispatch model of Federal Express with the more decentralized model of UPS.)

In addition to surveying some of the management literature, we contacted a small but diverse sample of companies who perform many of the same functions as IMA, including

facilities construction, service and supplies procurement and delivery, quality standard setting, maintenance and evaluative processes. We identified hotel chains, major retailers and warehousing / logistical service providers as industries with IM requirements that are similar to the Army's in size, scope and range of functions. The specific organizations we contacted were Hilton Hotels, Walmart and, at the recommendation of the International Warehousing Logistics Association, international logistics providers Exel and the KB Ackerman Co.⁷

The key insights we identified from these companies include:

1. Companies regionalize primarily in order to be close to their customers. Geographical proximity enables customized, rapid and quality response to customer needs. However, regionalization is tied to the larger corporate business model. For instance, Hilton achieves both standardization and also local responsiveness by franchising its hotels rather than through a regional corporate control structure.
2. All of the companies we contacted stress compliance with corporate standards (construction, aesthetic and operational). These are generally achieved through centralized education of staff as well as the promulgation of standards documents. Hilton operates a very sophisticated centralized University for this purpose.
3. All of the companies we contacted also have inspection systems, but responsibility for inspection varies. At Walmart this is the responsibility of regional Vice Presidents, who spend 4 days a week traveling to stores and distribution centers. These VPs communicate policy and collect information on emerging problems as well as inspect for compliance with corporate standards. Hilton requires a local inspection function at every hotel. The logistics and warehousing companies are less formal in their inspection approach.
4. Organizational structures are designed based on the industry. Some warehousing companies use a matrix structure with functions (e.g. chemical storage) and geographic regions. Others have a very flat regional structure with a balanced scorecard to evaluate the quality of service provided to customers.
5. Each company had a distinct metric for regionalization. Hilton has no regions, using its franchise structures instead. Walmart and many warehousing companies use criteria such as an 8-hour delivery circuit to establish the number and size of regions.
6. Span of control increases at higher levels of corporate management. Walmart districts include 8-10 stores, but their regional Vice Presidents manage 10-12 districts on average.
7. All of the companies rely heavily on re-engineered business processes and extensive information systems. The literature in corporate management extensively documents substantial cost savings as a result. For instance, Eastman Kodak found that its maintenance, repair and operation items (excluding manufacturing) involved 6500 suppliers, 30,000 transactions a year and an average purchase amount of \$45 – which cost \$115 per transaction and took 19 person days to fulfill. After Kodak deployed a desktop, web-based purchasing system for small transactions, they achieved resulting savings that averaged 8-

18% of previous costs. Walmart is famous for the detailed performance metrics they have defined and for their deployment of extensive IT systems to collect, analyze and report corporate information at all levels of the organization.

4.5 Conclusions from Comparative Analysis.

Three main conclusions emerge from our analysis of the other military services and of corporations who execute functions similar to the Army's installation management requirements.

1. **IMA is a new organization and is early on the maturation curve with regard to its organization and its operating procedures** (see Figure 4.1). Air Force installation management is embedded in a decades-old operating model. The Navy is evolving its regionalized installation management procedures from the bottom up, using the Southwest Region as a test bed for new initiatives before launching them Navy-wide. The mission of each service also directly influences the mode of integration between installation management and operational force command structures.
2. **Corporations adopt regionalization of equivalent functions primarily in order to maintain close relationships with customers.** This is a span of control issue directly related to the IMA region director "focused lens" role. Typically, corporate headquarters personnel enforce corporate standards and other auditing functions directly rather than through regional staff, except for those standards which directly relate to customer service and customer satisfaction. Span of control varies, depending on the specific industry and corporation; however, in general, there has been a significant move to flatter organizations with wider span of control at the regional level.⁸
3. **Corporations achieve cost efficiencies and wider spans of control through regionalization as a result of extensive business process re-engineering and the deployment of supporting information technology.** Modern software and computer networks make it possible to collect, aggregate, report and analyze information across a geographically dispersed organization at substantially less cost than equivalent paper-and-people-based systems and with flatter organizational structures. Re-engineering allows corporations to deploy their personnel in more "added-value" functions, reducing headcount and expense previously required for local and regional collection and analysis of data. It is **not enough to automate previous business processes** – the most significant efficiencies are gained by rethinking the service provision model and then automating the resulting desired processes. This approach has achieved substantial and repeated cost savings in the Navy's Southwest Region, with short payback periods for the required investment. Re-engineered information systems also provide timely and accurate operating data necessary for negotiating the most optimal supplier contracts in a timely manner, thereby capturing cost

efficiencies due to purchasing consolidation as well as to manpower level adjustments.⁹

Next, we look at the functional analysis of the regions.

Chapter 5. Functional Analysis of Regions

5.1 Overview of Methodology.

As the study progressed, it became clear that defining the core functions of the IMA Regions was essential to analyzing the organizational structure. The organizational design primarily needs to support the accomplishment of these functions. These functions need to support the primary objective of the study:

‘Develop the most effective and efficient IMA region structure to support the Army’s mission’.

With this as the overall objective in mind, the team used an affinity diagramming drill to identify the key functions of the regions¹⁰. After listing the primary functions of the regions, these were binned to identify the core, or most important, functions of the IMA regions. This analysis boiled down the IMA region core functions to three, with each core function consisting of three to four key sub-functions. The functional hierarchy of the IMA regions developed in this study is shown in Figure 5.1 in the next section.

The hierarchy was refined as more stakeholder interviews and research were conducted. This functional analysis was validated through comparison with the proposed FY05 Region TDA, the IMA Region METL, and the HQDA organization and operations (O&O) documentation that was developed during the Transformation of Installation Management (TIM) process. The hierarchy was approved by the ASA(I&E) and ACSIM during an IPR in July 2004.

5.2 Functions and Key Sub-Functions of Regions.

The final functional hierarchy of the IMA region is depicted in Figure 5.1.

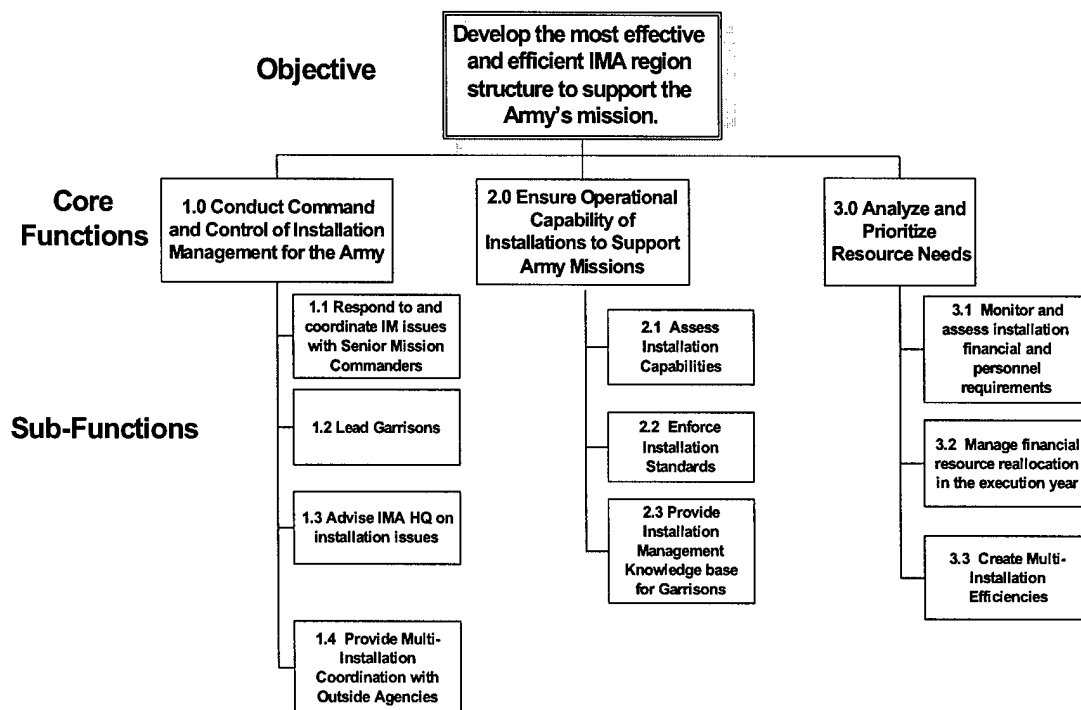


Figure 5.1: Functional Hierarchy of an IMA Region

The three core functions are listed and numbered in priority order: conduct command and control of installation management, ensure the operational capability of installations, and analyze and prioritize resource needs for installations. Each core function is further defined by 3-4 key sub-functions, which are listed in priority order in Figure 5.1. Throughout the study, these three functions were reinforced as the 'core' functions through the stakeholder interviews and research of the IMA organization. IMA was created to provide a centralized command and control structure for installation management in the Army. Installations exist to provide the platforms for training, deploying, sustaining and caring for the units, Soldiers and families of our Army, therefore IMA regions need to ensure the operational capability of installations to do this. One of the primary reasons for IMA's creation was to improve the resource allocation process for installations across the Army. Therefore a core function of IMA regions is to analyze and prioritize the resource needs of installations and communicate those to HQDA. These core functions define what the IMA Regions should do in supporting the Army's mission.

Under the command and control core function, the team learned through interviews that the Region's role in coordinating installation management issues with senior mission commanders was critical. Close to this in priority is the Region's role in leading Garrisons since the Region Director is the immediate superior of the Garrison Commander. The Regions also act as a "focused lens" by understanding and representing the issues/priorities of their installation issues with the IMA HQ. The Regions also play

an important role in coordinating specific issues between their subset of installations, and with external agencies that impact the installations. These four key functions represent the essence of what the Regions do in providing command and control for installation management.

The Regions provide crucial functions in ensuring installations are capable of performing their mission. Assessment teams from the regions evaluate their installations against common standards to determine what IMA priorities should be in funding for installation improvements. In order to meet their missions, installations must attain certain Army/DOD standards in terms of infrastructure, environmental issues and base services. IMA Regions are responsible for enforcing these standards. As the team interviewed stakeholders, a recurring theme was that regions should provide a knowledge base of expertise on installation management issues to which Garrisons can reach back. The Region's role in ensuring installation operational capability is defined by these three key functions.

IMA Regions have a role in analyzing and prioritizing resource needs for their subordinate installations, however they do not control the allocation of appropriated funds, the key resource, to installations. IMA HQ directly controls allocation of appropriated funding to the installations. The Region role is to monitor and assess installation needs, and assist IMA HQ in developing resource priorities, to support the allocation decision making process. The study team did learn that the Regions play a direct role in resource allocation during the execution year. Any fund reallocation between installations during the year of execution needs Region Director approval however the reallocation is done solely by HQ IMA. In the area of resources, the Regions play a significant role in seeking, and coordinating, efficiencies that can be gained by managing installations located in the same geographic area. These three functions capture the important roles of the Regions in analyzing and prioritizing installation resource needs.

5.3 Comparison of Functions with Manpower Allocation.

Each of the IMA regions is task organized similarly to perform the three core functions. The proposed Table of Distribution and Allowances (TDA) the study team was provided by IMA HQ specifies the personnel structure for each of the four regions. All of the personnel authorized to a region are assigned a paragraph title, indicating the division or sub-component of the region for which they work.

Mapping the region structural sub-components to the region's three core functions provides an indication of how the regions are structured and aligned to perform these core functions. It also indicates the varying levels of personnel resources the regions are allocating to each of the core functions.

Specifically, we examined each of the 29 different paragraph titles in the proposed FY 05 TDA. For example, the region paragraph title or sub-component "Office of the Director"

can be mapped to the region's first core function, *Conduct Command and Control of Installation Management for the Army*. The "Business Management and Housing Branch" paragraph title or sub-component can be mapped to the second core function, *Ensure Operational Capability of Installations to Support Army Missions*. A sample mapping is provided in Table 5.1.

Table 5.1: Sample Mapping of TDA Paragraph Titles to Region Core Functions

<i>Paragraph Title or Regional Sub-Component</i>	<i>Regional Core Function</i>
Civilian Personnel Branch	3
Human Resources Division	3
Operations and Mobilization Branch	2

The region TDA not only divides the region's manpower into these paragraph titles, but also indicates how many personnel are authorized to work in each of these sub-components. If the number of personnel authorized to each region's structural sub-component is added to the mapping of the region's structural sub-components to core functions, we can examine how the regions are allocating their personnel resources.

Table 5.2: Sample Mapping of Authorized Strength to Core Functions

<i>Paragraph Title or Regional Sub-Component</i>	<i>Regional Core Function</i>	<i>Authorized Personnel</i>
Civilian Personnel Branch	3	10
Human Resources Division	3	11
Operations and Mobilization Branch	2	16

Following this same process for all authorized positions on the proposed Region FY05 TDA yielded the results graphically displayed in Figure 5.2. The chart in Figure 5.2 shows the total percentage of personnel authorized in Regions to each of the core functions defined by the study team.

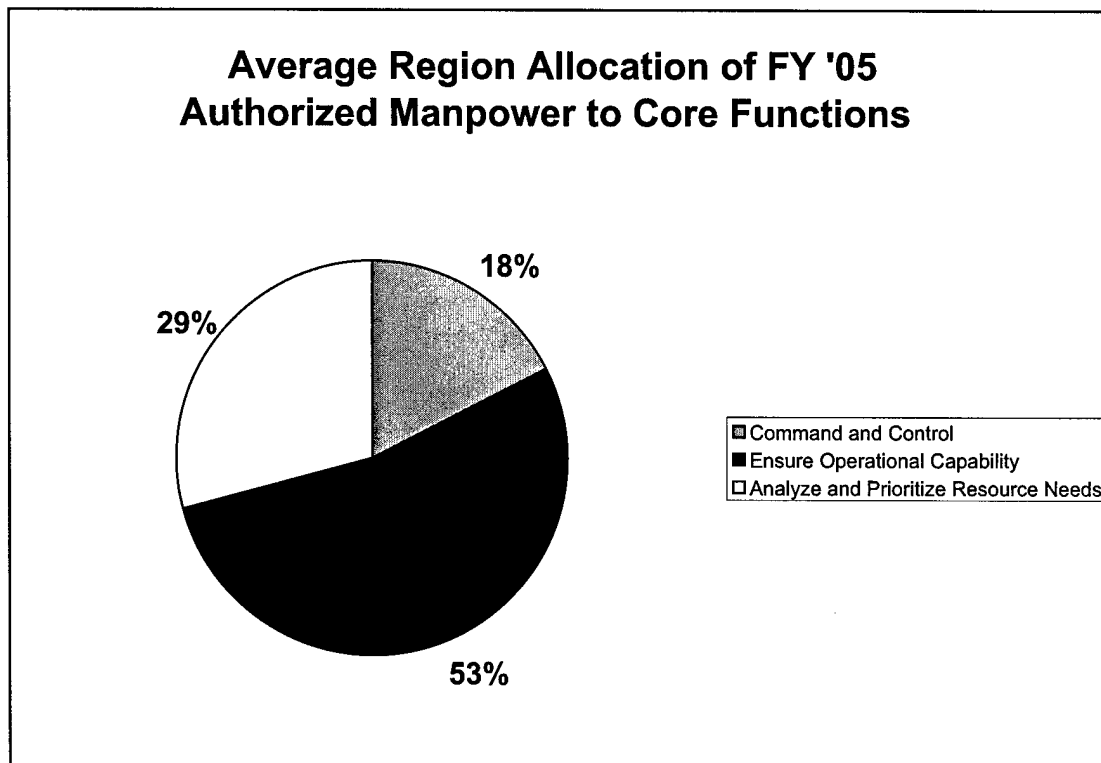


Figure 5.2: Average Region Allocation of Personnel

The pie chart shows that the region's TDA allocates approximately 18% of the region's personnel to the most important function of *Conduct Command and Control of Installation Management for the Army*. The majority of the region's manpower is allocated to the *Ensure the Operational Capability of Installations* function while close to 30% of the region's personnel is aligned with the least important core function of *Analyze and Prioritize Resource Needs*.

5.4 Comparison of Functions with the Mission Essential Task List (METL).

The study team compared the functions with the mission essential task list (METL) of IMA and the regions as an additional means of validating that we had these correct. Table 5.3 shows that each METL task for IMA maps to a function defined by the study team. The aligned function numbers shown in the table correspond to a function number in Figure 5.1.

Table 5.3: Comparison of IMA METL with Functions

METL Task	Aligned Function
Ensure Sound Stewardship of resources	3.0
Lead and guide the workforce to achieve Transformation of Installation Management	2.3, 1.2
Promulgate the mission, vision, and operational effectiveness of IMA throughout the Army	1.0
Establish and enforce standards and improve performance, leveraging technology	2.0

Similarly, the IMA Region METL tasks map well to functions defined in this study as shown in Table 5.4.

Table 5.4: Comparison of IMA Region METL with Functions

Task	Aligned Function
Monitor and assist in allocation of resources	3.0
Assess, analyze, and enforce installation performance to standard	2.1, 2.2
Provide a trained and ready workforce	2.3
Promote and sustain internal and external commo and situational awareness	1.1, 1.3, 1.4
Achieve regional efficiencies	3.3
Lead assigned installations	1.2
Support Army and MACOM mission and transformation requirements	2.0

5.5 Comparison of Functions with the Organization and Operations (O&O) Documentation.

As part of the Transformation of Installation Management (TIM) process, responsibility for standardizing the level of service and quality of life for soldiers and families on installations worldwide shifted from functional Major Army Commands (MACOMs) to the newly formed Installation Management Agency (IMA). As part of this standardization process, IMA identified 95 essential services that encompassed all

installation support activities. These services were then organized into 38 functions and finally into nine major service areas: Command and Staff, Personnel and Community, Information Technology, Operations, Logistics, Engineering, Resource Management, Acquisition, and Health Services. This hierarchy is depicted in Figure 5.3.

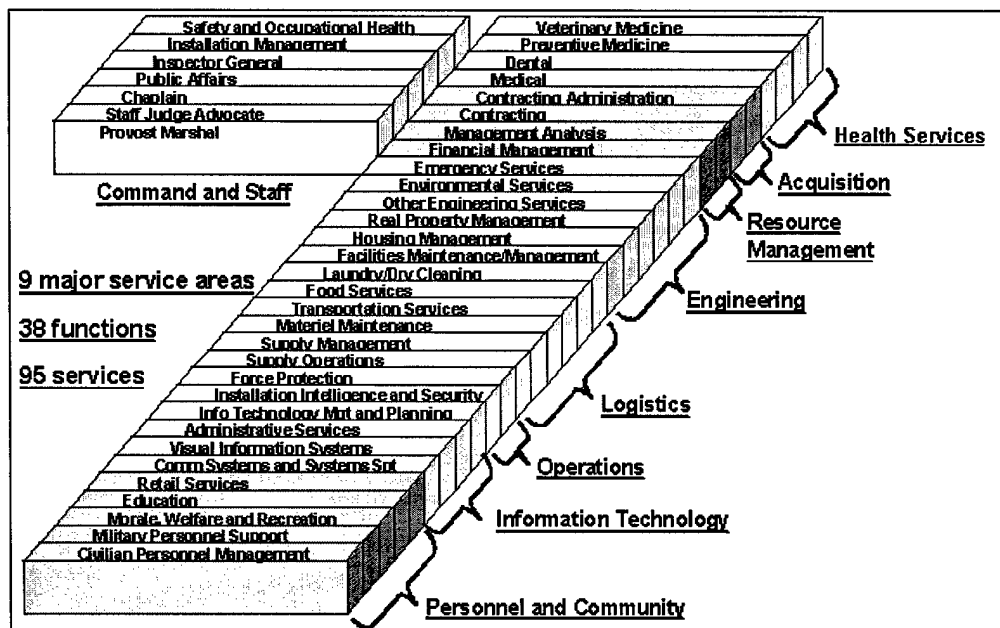


Figure 5.3: IMA Services Hierarchy

IMA and HQDA functional proponents coordinated to develop Organization and Operations (O&O) plans for each of these 95 essential services. These O&O plans describe the roles, responsibilities, and operations for all echelons of the Army: Installations, IMA Regions, IMA HQ, Field Operating Agencies (FOAs), The Army Staff (ARSTAF), Proponent Secretariat, other offices/agencies, and MACOMs. As an example, the approved O&O Plan for Service 23 is included as Appendix B. This service falls within the Supply Operations function of the Logistics service area.

In order to identify the functions of the IMA Regions, we examined each of the O&O plans located in the IMA Knowledge Coordination Center (KCC) of Army Knowledge Online (AKO) and recorded all of the tasks required of the IMA Regions for each service in a spreadsheet. After including the seven Region-level METL tasks listed in Table 5.5 later in this Chapter, we reviewed the consolidated list of tasks to eliminate duplications, and arrived at a final list of 415 Region-level tasks. Finally, we mapped each of these tasks to the IMA Region Functional Hierarchy described in Section 5.2 and depicted in the Figure 5.1.

A small extract from the table of Region-level tasks we created is shown below:

Table 5.5: Extract of Mapping of Region O&O tasks to Functional Hierarchy.

Function Number	Region-level Tasks	Source Task
3.3	Achieve regional efficiencies.	METL
1.4	Act as a conduit between the ACA and the installation contracting offices.	74,75
1.3	Act as primary liaison between OCONUS Region and OCONUS MACOM for agreements matters involving overlapping areas of tactical mission and BASOPS support requirements.	70
2.2	Act as technical adviser to operating officials in all matters pertaining to Army installation laundry and dry cleaning program.	30
2.1	Address issues and solve problems for all installation NAF operations and/or NAFIs.	10,11,12,13,51
2.2	Advise and be responsible for maintaining a continuing affirmative employment program to promote equal opportunity and to identify and eliminate discriminatory practices and policies within the region.	92
3.2	Advise on all audit related matters, provide audit and analytical information related to efficiency of operations, stewardship of resources, discretionary spending authority, and adequacy of management controls.	94
2.3	Advise the Region commander/director, provide technical advise and assistance to the Region and installation staffs, and provide required reports to higher HQ/other agencies.	95
2.1	Advocate garrison master planning needs.	54
3.1	Advocates garrison real property management needs.	55
3.2	Allocate funding and resources for IDS monitoring and armed response force for classified storage areas, COMSEC support for non-deployable units service by the installation COMSEC custodian, PERSEC support for all tenant organizations and activities, and installation-wide security education and training program as standard level of support at all installations.	21

Note that the table includes the Region-level task, the source (IMA Region METL or service O&O Plan), and the appropriate Region sub-function. We were able to easily associate each of the Region-level tasks with one of the Region sub-functions, validating that we had identified the appropriate Region functions and sub-functions in our earlier analysis.

An examination of our functional breakout indicates that of the 415 total Region-level tasks, 116 tasks support the Region Core Function *Command and Control*, 212 tasks support *Ensure Operational Capability*, and 87 tasks support *Analyze and Prioritize Resource Needs*. These numbers, in the form of percentages of the total Region-level tasks, is depicted in the figure below:

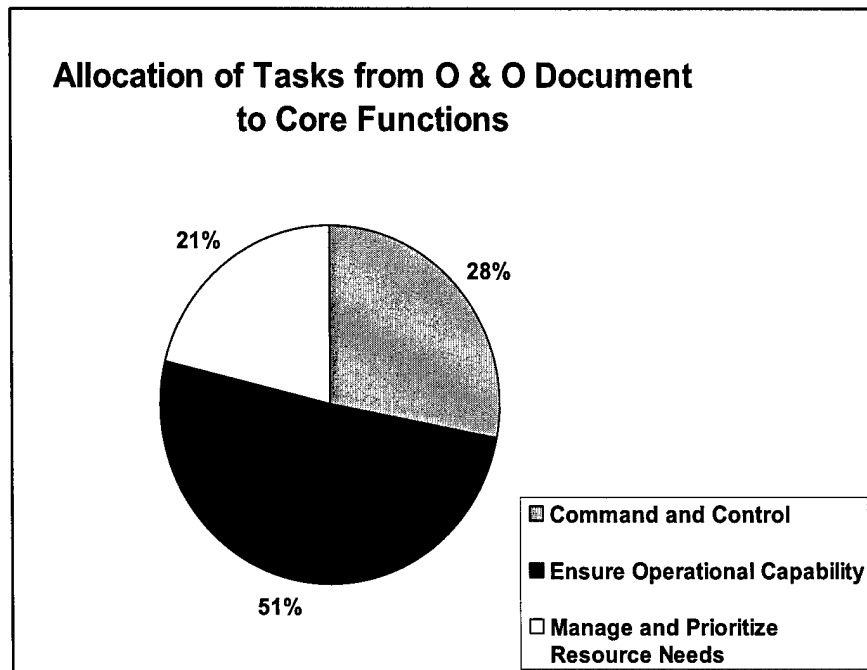


Figure 5.4: Summary of Mapping of Region-level Tasks from O&O Documentation to Region Functional Hierarchy

Reconciling our functional hierarchy with the task allocation determined through the TIM process provided another means to validate that the functions depicted in Figure 5.1 capture the critical functions of the Regions.

5.6 Validation of Functions with Stakeholders.

Defining the core functions of the IMA Regions was essential in this study because the organizational structure needs to support the accomplishment of these functions. After determining the key objective, core and sub-functions of the Regions, the team compared these with the Region manpower allocation, the HQDA O&O documentation and the IMA and Region METLs as a means of validation. This chapter described the functions and validation process.

Since the function definition is critical, we also asked the primary stakeholders if we captured these correctly. The ASA(I&E) and the ACSIM were shown the functional hierarchy during an IPR on 19 July 2004 and had no issue with the functions. On 25 July 2004, the team also presented the functional hierarchy to the former IMA Director during an IPR. MG Aadland stated that we had this about right, but did suggest some minor

changes in wording of sub-functions. These were incorporated into the hierarchy shown in Figure 5.1 but did not change the essence of the functions. The current IMA Director, MG Johnson, was briefed on 21 Sep 2004 and concurred with the hierarchy as shown in Figure 5.1.

Chapter 6. Alternative Region Organizational Structures

6.1 Creating Region Design Alternatives.

The next step in the study process was to create region organizational design alternatives that could be evaluated. The alternatives were created by identifying the key dimensions of organization design for the regions, developing a range of acceptable values / characteristics within each dimension, and then grouping specific values/characteristics from each dimension to create unique alternatives. This process is illustrated through Figures 6.1 and 6.2.

Creating Region Design Alternatives

Key Dimensions Of Organization Design	Functions that Regions Do	# People performing Functions	# Regions	Boundaries	Region HQ Location
	C ²	50	0	None	All in DC
Range Of Dimensions	Assessment RM	150	2	CONUSA; ACA	Monroe & SA; Lvnworth & SA
	C ² RM	351	3	NE; South; West	Atl., Monroe, Lvnworth
	C ² Assessment	388 (FY05 authorized # in all 4 regions)	4	Current; Functional by type inst.	Current
	C ² Assessment RM	388 (FY05 authorized # in all 4 regions)	5	Modified current plus MDW	Atl., Bliss Lvnworth, Monroe, RIA
	C ² Assessment RM	714 (FY05 required # in all 4 regions)	8	balance # of installations ~10 per region	TBD (8)

Figure 6.1: Framework for Design Alternatives

The key dimensions of the IMA Region organizational design are:

- functions the regions do
- number of military/DA civilian personnel assigned to the Region
- number of regions in CONUS
- boundaries of the CONUS regions
- Region HQ locations.

The range of values/characteristics for the design dimensions was purposely made large to allow for developing unique alternatives for evaluation. The range of the functions dimension was defined as a Region performing all three core functions as defined in

Chapter 5, performing only two of the three functions, or performing only the command and control function. Since the command and control function is the most critical, the team believed there was no reason to have regions if they did not perform this function.

The range of personnel assigned to the Regions in these alternatives, in aggregate, was 50 to 388. Fifty personnel was the team's estimate for the manpower needed if the regions performed only the command and control function from IMA HQ, using the IMA HQ staff to perform all other functions. The 388 number is the total authorized number of personnel for all CONUS regions from the proposed FY05 TDA the team received from the IMA HQ.

The number of regions was varied from zero to eight to consider alternatives in which region functions were centralized at IMA HQ, to an alternative with significantly more (double) the current number of regions. The region boundaries were varied to evaluate alternatives that matched other key agency boundaries as shown in Figure 6.1. The final key design dimension, the region HQ locations, included alternatives with both the current region HQs and other military installations to allow for developing unique alternatives. Unique alternatives, described in Section 6.3, were developed using these design dimensions.

Region Design Alternatives

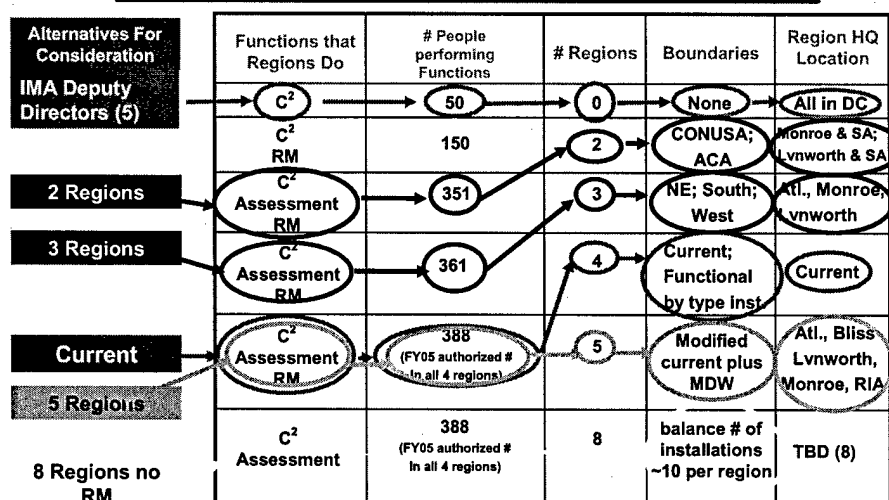


Figure 6.2: Example of Creating Design Alternatives

Figure 6.2 shows how design alternatives were developed by combining values/characteristics from each dimension. For example, the current IMA Region organization performs all three of the core functions, has an authorized strength of 388 personnel (total for all four regions) by the proposed FY05 TDA, and consists of four regions with the current boundaries and region HQs. Other design alternatives are shown

6.2 Region Design Alternatives for Evaluation.

1. DC Centered Alternative
2. Army Contracting Agency (ACA) Two Region Alternative
3. Continental US Army (CONUSA) Two Region Alternative
4. Three Region Alternative
5. Current Regional Structure
6. Functional Four Region Alternative
7. Five Region Alternative
8. Eight Region Alternative

[illegible]

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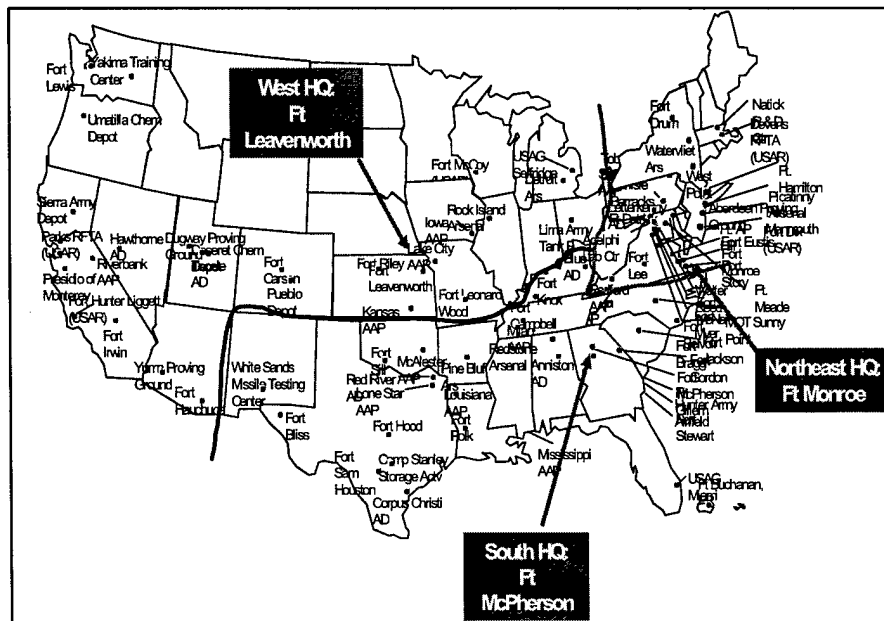


Figure 6.6: Three Region Alternative

The Current Regional Structure consists of four geographic regions, developed by HQ IMA. It is important to analyze this alternative and consider it as a baseline when analyzing the other seven alternatives.

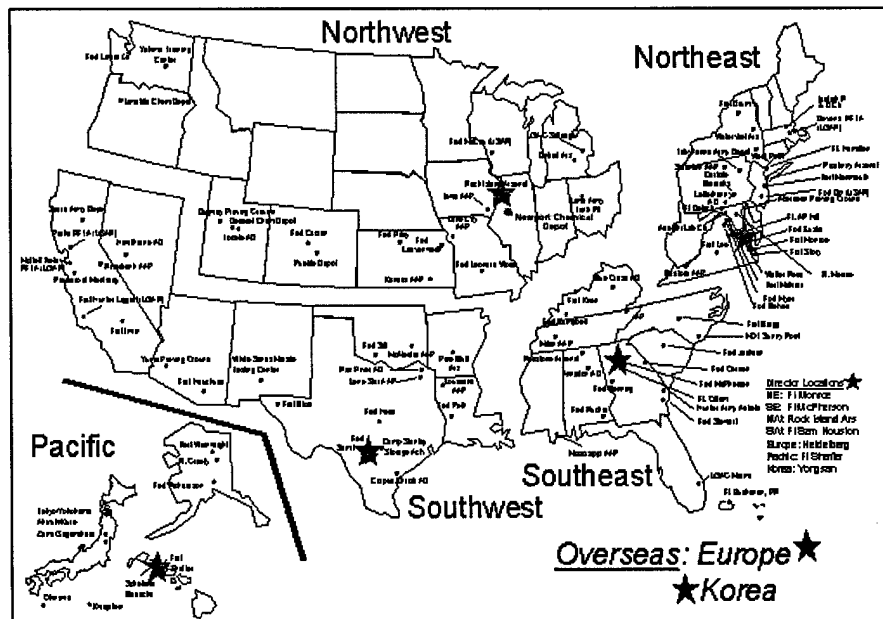


Figure 6.7: Current IMA Regional Structure

[illegible]

The continental United States divided into five regions is the sixth alternative (see Figure 6.9). This alternative contains a fifth region headquarters with regions performing all three core functions. This alternative does not require any additional personnel. Each of the region headquarters gets its fair share of the currently authorized 388 personnel. The boundaries were selected to generally balance the number of large installations in the regions, and to conform to federal region boundaries. The Region HQs were aligned with current locations. Fort Carson was chosen as the West Region HQ to locate it at a major Army installation in the region.

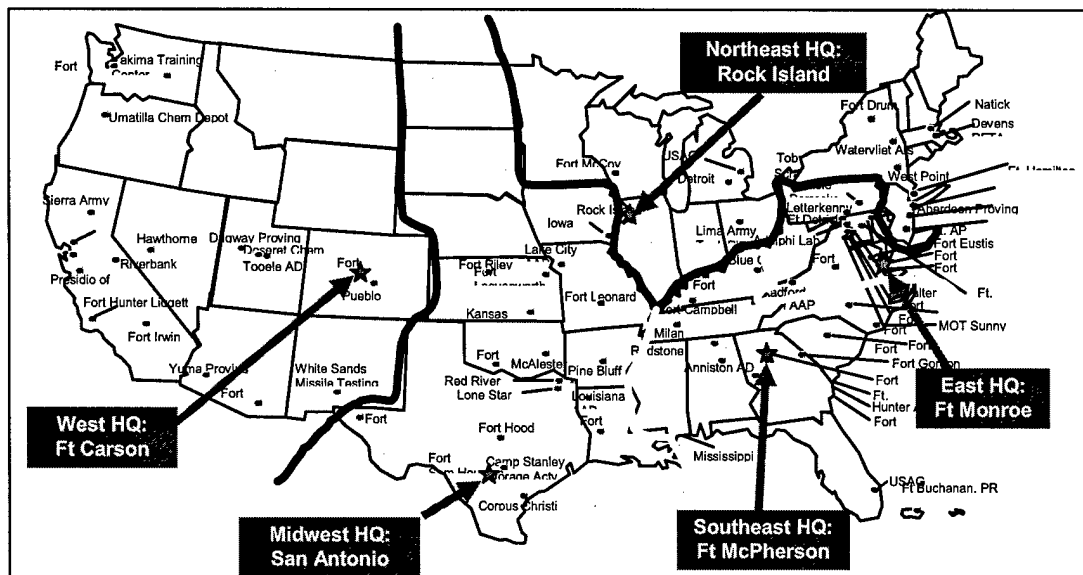


Figure 6.9: Five Region Alternative

An additional alternative divides the continental United States into eight regions. The boundaries were selected to generally balance the number of installations in regions. The region HQs were selected at either existing Region HQ locations or major Army installations. The size of each region's staff is just under 50 personnel since we assumed the Army would not authorized any additional personnel beyond 388 to man Regions.

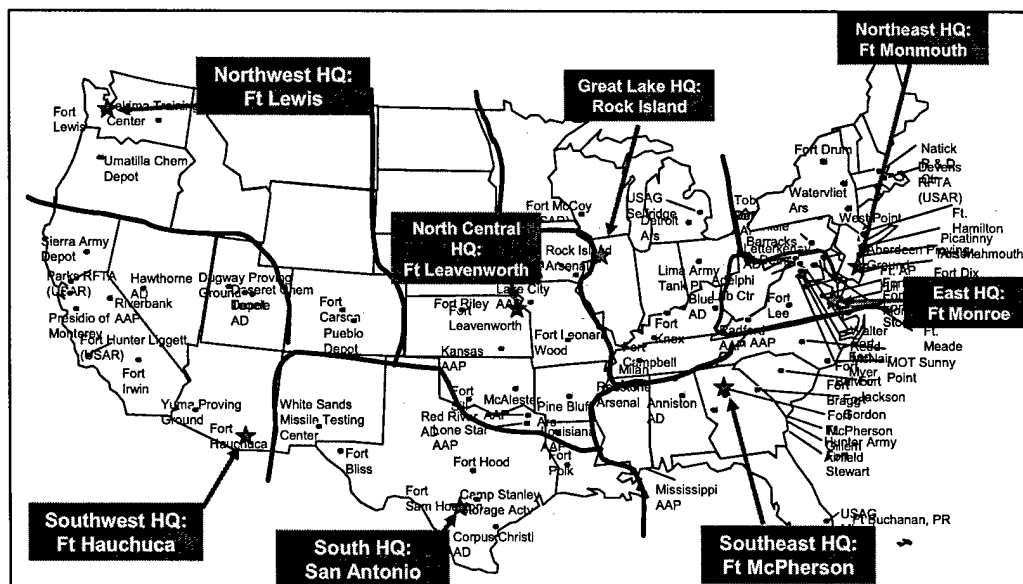


Figure 6.10: Eight Region Alternative

Given these options, we next develop a model to compare these alternatives.

Chapter 7. Comparing Design Alternatives

7.1 Overview of Quantitative Evaluation Methodology.

To compare design alternatives, the study team developed a common methodology using the functions of regions as the foundation for the evaluation. The goal of this quantitative model was to measure how well each design alternative provided potential value added in meeting the key functions of regions.

The team developed objectives that the organizational design should meet for each sub-function. To determine how well an alternative met an objective, the team created quantifiable evaluation measures. These evaluation measures were weighted to reflect their relative importance in meeting the overall objective. The alternatives were then scored on each evaluation measure to determine the overall potential value-added from the region design alternative. Table 7.1 provides a summary of the weights and objectives developed for each function.

Table 7.1: Summary of Quantitative Value Model

Core Function	Local Weight	Sub-function	Local Weight	Objective
1.0 Conduct command and control of Installation Management for the Army	0.46	1.1 Respond to and coordinate IM issues with Senior Mission Commanders	0.43	1.1.1 Maximize responsiveness to Senior Mission Commanders
		1.2 Lead garrisons	0.36	1.2.1 Maximize capability to lead garrisons
		1.3 Advise IMA HQ on installation issues	0.17	1.3.1 Maximize capability to understand and articulate installation issues to IMA HQ
		1.4 Provide multi-installation coordination with outside agencies	0.04	1.4.1 Maximize capability to coordinate IM issues with outside agencies
2.0 Ensure operational capability of installations to support Army missions	0.40	2.1 Assess installation capabilities	0.54	2.1.1 Maximize region assessment capability
		2.2 Enforce installation standards	0.39	2.2.1 Maximize capability to enforce standards
		2.3 Provide installation management knowledge base for garrisons	0.07	2.3.1 Maximize availability of subject matter experts
3.0 Analyze and prioritize resource needs	0.14	3.1 Monitor and assess installation financial and personnel requirements	0.43	3.1.1 Maximize region ability to understand installation resource needs
		3.2 Manage financial resource reallocation in the execution year	0.07	3.2.1 Maximize region ability to assess and prioritize needs, and make recommendations to IMA Headquarters
		3.3 Create multi-installation efficiencies	0.50	3.3.1 Maximize region chances of generating multi-installation efficiencies

Table 7.1 shows that core function 1.0, conduct command and control of installation management for the Army, is considered the most important with a weight of 0.46 on a scale of 0 to 1. Based on stakeholder interviews and research discussed previously, the team weighted analyzing and prioritizing resource needs significantly less important than the other two core functions with a weight of 0.14. (See Section 7.3 for weight assessment).

7.2 Defining Measures of Effectiveness.

To evaluate the value added from a region design alternative, we needed to define quantitative evaluation measures for each objective. Table 7.2 provides the objectives with their evaluation measures for the Command and Control core function. The definition column provides a quantitative description of each evaluation measure. Since most of the objectives cannot be directly scored, the team developed proxy evaluation measures to quantitatively score how well a particular alternative met a given objective for a sub-function. The global weight column reflects the relative level of importance of a given evaluation measure to all other measures. The global weights in Tables 7.2, 7.3 and 7.4 collectively sum to one. The shape of the value curve column reflects how each measure was scored (this is discussed in greater detail later in this chapter). Appendix A provides additional detail on each evaluation measure.

Table 7.2: Command and Control Function Evaluation Measures

Objective	Evaluation Measure Name	Definition	Type	Global Weight	Shape of Value Curve
1.1.1 Maximize responsiveness to Senior Mission Commanders	1.1.1.1 Weighted # of GO HQ's in regions	Summation of the total number of stars in a region, averaged across regions (lower is better)	Proxy Constructed	0.17	Linear
	1.1.1.2 Number of different MACOMs in region	Average number of different MACOMs represented in a region (lower is better)	Proxy Natural	0.03	Linear
1.2.1 Maximize capability to lead garrisons	1.2.1.1 Constructed multi-dimension span of control	Summation of 11 span of control indicators weighted by Regional Director input, averaged across regions (higher is better)	Direct Constructed	0.17	Linear
1.3.1 Maximize capability to understand and articulate installation issues to IMA HQ	1.3.1.1 Number of installations in region	Average number of installations in region (lower is better)	Proxy Natural	0.08	Convex
1.4.1 Maximize capability to coordinate IM issues with outside agencies	1.4.1.1 Number of different major agency regions represented in region	Average number of distinct outside agencies in a region (lower is better)	Proxy Natural	0.02	Linear

Table 7.3 provides the same information described above for the Ensure Operational Capability function.

Table 7.3: Ensure Operational Capability Function Evaluation Measures

Objective	Evaluation Measure Name	Definition	Type	Global Weight	Shape of Value Curve
2.1.1 Maximize region assessment capability	2.1.1.1 Number of personnel working in the assessment function (#2.0) per installation	Average number of region personnel performing the assessment function, divided by the number of installations in the region (higher is better)	Proxy Natural	0.13	Linear
	2.1.1.2 Travel time from HQ to installations	Average total estimated travel time from regional HQ to each installation, assuming four annual visits, based on flight availability and distance (lower is better)	Proxy Constructed	0.09	Convex
2.2.1 Maximize capability to enforce standards	2.2.1.1 Facility control measure in region	Average total number of facilities on installations in a region (lower is better)	Proxy Natural	0.13	Linear
	2.2.1.2 Total square yards of roads in region	Average total sq. yards of paved and unpaved roads on installations in the region (lower is better)	Proxy Natural	0.03	Linear
2.3.1 Maximize availability of subject matter experts	2.3.1.1 Size of total region staff	Average number of personnel in the region staff (higher is better)	Direct Natural	0.03	S-curve

Table 7.4 provides the same information described above for the Analyze and Prioritize Resource Needs function.

Table 7.4: Analyze and Prioritize Resource Needs Function Evaluation Measures

Objective	Evaluation Measure Name	Definition	Type	Global Weight	Shape of Value Curve
3.1.1 Maximize region ability to understand installation resource needs	Number of region resource analysis (RA) people per installation	Average number of designated RA personnel divided by the number of installations in the region (higher is better)	Proxy Natural	0.06	Linear
3.2.1 Maximize region ability to assess and prioritize needs, and make recommendations to IMA Headquarters	Size of OMA & AHP budget per RA staff person at region	Average regional OMA and AHP budget managed by region divided by the number of RA staff in the region (less is better)	Proxy Natural	0.01	Convex
3.3.1 Maximize region chances of generating multi-installation efficiencies	Number of different GSA regions represented in IMA region	Average count of the overlapping GSA regions within the regions (less is better)	Proxy Natural	0.01	Linear
	Number of region assessment personnel	Average number of personnel performing assessment function on the region staff (higher is better)	Proxy Natural	0.06	Linear

Each of the evaluation measures with more complete definitions and their associated value curves are provided in Appendix A.

7.3 Defining the Relative Importance of a Region's Functions.

To properly reflect the relative importance of the region functions, the team generated weights for each of the evaluation measures used to quantitatively assess how well a design alternative met the defined objectives for sub-functions. Weights depend on the importance and variation in these measures (Kirkwood, 1997). To develop weights, the team created the matrix shown in Table 7.5. Across the top of the matrix is a spectrum of importance to categorize a measure as a critical factor, important factor or just a factor. The left side of the matrix is used to segment the measures based on the variation in the scale of the evaluation measure. A measure that is considered a critical factor in the evaluation of the region structure and has a large variation in the measure's scale would be placed in the upper left of the matrix. An evaluation measure which is considered only a factor and has low variation in its scale is placed in the lower right of the matrix. All the evaluation measures, designated by their hierarchy number from Figure 5.1, were placed in this matrix based on the team's assessment of their criticality and variation in measurement scale.

Table 7.5: Evaluation Measure Global Weight Assessment Table

GLOBAL WEIGHT ASSESSMENT TABLE							
		Level of Importance of the Evaluation Measure					
		Critical Factor		Important Factor		Factor	
Variation in Measure Data	High	1.1.1.1 # GO HQ	100	2.1.2.1 Travel Time	50	2.3.1.1 Region Staff	15
		1.2.1.1 Span of Control	100	1.3.1.1 # Installations	45		
	Medium	2.1.1.1 # Assess/Install	75	3.1.1.1 # RA/Install	35	1.4.1.1 Diff Agency Rgn	10
		2.2.1.1 Facility Control	75	3.3.1.2 # Assess/Rgn	35		
				2.2.1.2 Roads	20		
	Low			1.1.1.2 # MACOMs	15	3.2.1.1 \$\$/RA Staff	5
						3.3.1.1 # GSA Rgns	5

As an example, during stakeholder interviews we identified the number of General Officer (GO) headquarters in the region as a critical design factor regarding command and control due to the increased coordination requirements on the Region Director when there are a large number of GO headquarters in the region. Since our alternatives varied widely in terms of the average number of GO headquarters in a region, this evaluation measure was placed in the upper left of the matrix. Similarly, the constructed span of control measure was deemed critical based on stakeholder analysis, and its scale varied widely across alternatives. On the lower right of the matrix, the number of different General Supply Activity (GSA) regions represented in an IMA region was a proxy measure for the create multi-installation efficiencies sub-function. This was considered the least important measure and had the smallest variation in the measurement scale.

Once all evaluation measures were arrayed on the matrix, we assigned each a number from one to 100. The critical factors with high variation in their scale are deemed the most crucial measures in evaluating an alternative so they receive a score of 100. The

scoring descends then through the critical factors, then through the important factors from high to low, then through the factors. The global weight for a measure is then normalized on a scale of 0 to 1 by calculating:

$$\frac{f}{\sum_{i=1}^n f_i} \text{ where } f \text{ is the score assigned to a measure and } n = \text{total number of measures.}$$

The resulting global weights are reflected in Tables 7.2, 7.3 and 7.4.

Figure 7.1 shows the evaluation measures listed left to right from highest to lowest weight. The two measures with the highest weight are the number of GO headquarters in a region, and the constructed multi-dimension span of control measure. The span of control measure was constructed by surveying the four CONUS Region Directors and asking for their input on the factors that impact the number of installations they can effectively control. The resulting measure is a summation of 11 span of control indicators weighted by the Region Director input.

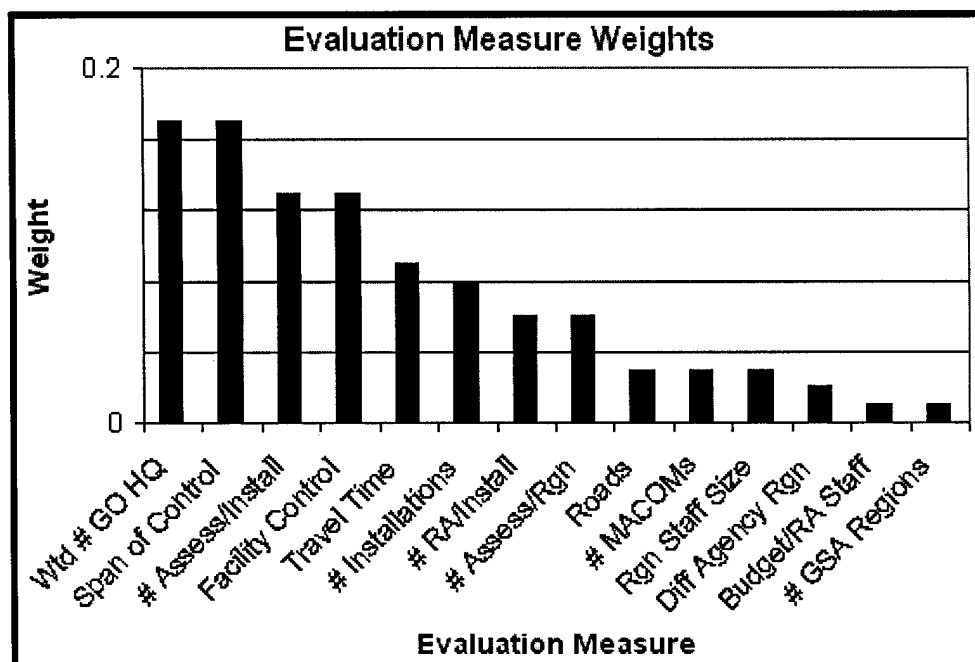


Figure 7.1: Evaluation Measure Global Weights

7.4 Scoring Alternatives Using Measures of Effectiveness.

The team developed a MS EXCEL® spreadsheet model with macros (Kirkwood, 1997) to generate scores for all the evaluation measures. The scores were calculated from data collected from various web sources and IMA HQ personnel. The model developed was thorough, yet flexible and adaptable to several different region alternatives.

Figure 7.2 provides an example for describing the scoring of alternatives on a particular evaluation measure. The facility control measure is used to evaluate alternatives on the function of enforcing installation standards. Facility control is a standardized measure of the number of facilities on an installation, to include buildings, utilities and land. This measure was deemed to be a critical factor with a medium level of variation in its measurement scale so it ended with a global weight of 0.13, the fourth highest. To score alternatives on this measure, the team collected facility control data for all CONUS installations under IMA's control. Each alternative specifies the installations under a particular IMA Region so we used the spreadsheet model to calculate the total facility control number for each region under an alternative. This number was averaged across the regions in an alternative to yield one number for the alternative. This number was then converted to a 'potential value added' score using the value curve shown in Figure 7.2.

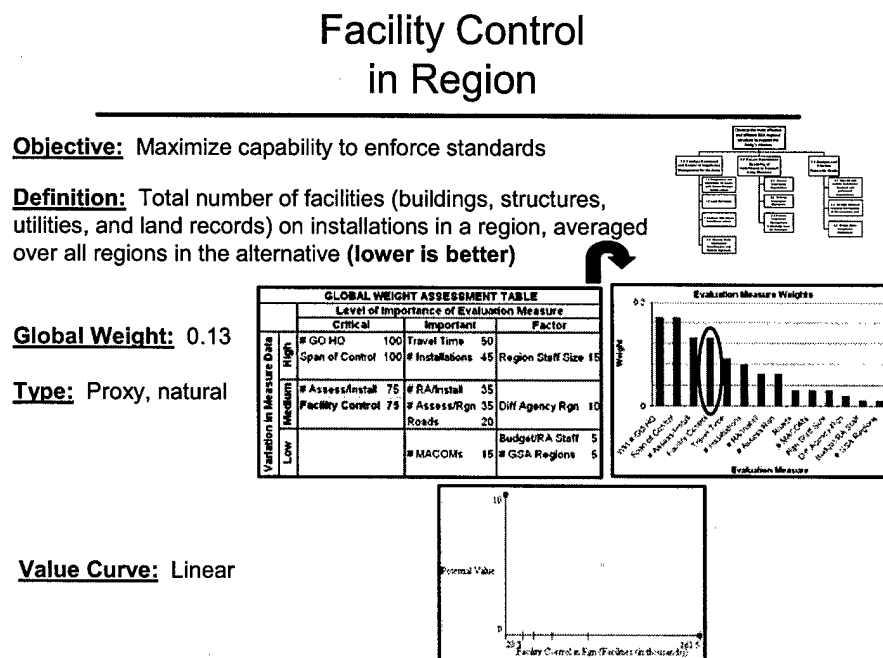


Figure 7.2: Example of Alternative Scoring

The value curves for all measures have a scale from 0 to 10 for potential value added from the region on the y-axis. The x-axis is different for each measure depending on its scale. The shape of the value curve is also different for each evaluation measure. Most of the curves were assumed to be linear unless there was a compelling reason to assume

another shape. All measures and curves are provided in Appendix A, and the rationale for any value curve that is not linear is described. In the facility control example, the x-axis scale goes from 20.3 (the lowest possible value) to 162.5 (the highest possible). Lower is better in this measure because it is easier to enforce installation standards when the IMA region has fewer facilities under its purview. In terms of potential value added, ten is the best score so a region alternative with a facility control score of 20.3 receives a value added score of ten while an alternative with a facility control score of 162.5 receives a value added score of 0. A facility control score was generated for each alternative, which was then used to calculate an associated potential value added score between 0 and 10 using the linear value curve.

The process for scoring alternatives on the facility control evaluation measure described above was performed for all alternatives on each evaluation measure. The resulting raw data matrices are provided in Tables 7.6 and 7.7. The data is provided in two tables for readability.

Table 7.6: Raw Data Matrix for 0 – 4 Region Alternatives

Evaluation Measure	No Regions	CONUSA	ACA	Three Region	Current	Functional Four
Weighted # GO HQ in Region [Less is better]	168	84	84	56	42	42
# Different MACOMs in Region [Less is better]	4	4	4	4	4	1
Multi-dimension Span of Control [Higher # is better]	0	5.29	5.19	7.11	7.96	8.6
# Installations in Region [Less is better]	81	40.5	40.5	27	20.25	20.25
# Agency Regions Represented in Region [Less is better]	33	20.5	22.5	16.7	12.75	29.75
# Personnel Work Assessment per Installation [More is better]	0	2.632	2.465	2.502	2.682	2.832
Travel Time Region HQ to Installations [Less is better]	1345.3	663.6	786.2	369.5	287.7	380.4
Facility Control (in thousands) in Region [Less is better]	162.5	81.2	81.2	54.2	40.6	40.6
SQ Yds (in millions) of Paved & Unpaved Roads [Less is better]	531.6	265.8	265.8	177.2	132.9	132.9
Size of Region Staff [More is better]	0	176	176	121	97	97
# RA People per Installation in a Region [More is better]	0.000	1.397	1.308	1.344	1.444	1.525
OMA+AHP Budget (in millions) per RA Staff in a Region [Less is better]	9803	47.13	47.13	45.38	43.76	43.76
# Different GSA Regions Represented in Region [Less is better]	11	6	6	4	3.25	8.25
# Personnel Work Assessment Function [More is better]	0	98	98	67	52	52

Table 7.7: Raw Data Matrix for 5-8 Region & DC Director Alternatives

Evaluation Measure	Five Region	Modified Five	Eight Regions	DC Centered	Ideal
Weighted # GO HQ in Region [Less is better]	33.6	33.6	21	33.6	21
# Different MACOMs in Region [Less is better]	3.6	3.6	3.5	3.6	1
Multi-dimension Span of Control [Higher # is better]	8.58	8.58	9.4	8.54	10
# Installations in Region [Less is better]	16.2	16.2	10.125	16.2	10.125
# Agency Regions Represented in Region [Less is better]	11.4	13	10.5	11.4	10.5
# Personnel Work Assessment per Installation [More is better]	2.571	2.571	3.363	0.000	3.363
Travel Time Region HQ to Installations [Less is better]	224.6	223.9	112.9	1345.3	113.0
Facility Control (in thousands) in Region [Less is better]	32.5	32.5	20.3	162.5	20.3
SQ Yds (in millions) of Paved & Unpaved Roads [Less is better]	106.3	106.3	66.5	531.6	66.5
Size of Region Staff [More is better]	78	78	49	0	176
# RA People per Installation in a Region [More is better]	1.442	1.442	0	0	1.525
OMA+AHP Budget (in millions) per RA Staff in a Region [Less is better]	42.62	42.62	9803	9803	42.00
Different GSA Regions Represented in Region [Less is better]	2.4	3	11	11	2.4
# Personnel Work Assessment Function [More is better]	41	41	0	0	98

7.5 Results of Quantitative Analysis.

The scoring of alternatives on evaluation measures was used to provide a quantitative measure of the potential value added from the alternative to fulfilling the functions defined in Chapter 5. The overall potential value added for an alternative is the sum product of the raw value-added scores and the global weights of the evaluation measures:

$$U(x) = \sum_{i=1}^n W_i V_i(x_i)$$

where x is an alternative, x_i =score of the alternative on the i^{th} measure, $V_i(x_i)$ = value added of the alternative for the i^{th} measure, $U(x)$ is the overall value added of the alternative and n = total number of evaluation measures.

Table 7.8 provides a summary of the potential value-added for all alternatives.

Table 7.8: Decision Matrix

Evaluation Measure	GW	CON-USA	ACA	3 Rgn	Current	5 Rgn	Fxnl 4	8 Rgn	DC Rgn Dirs	Ideal
Weighted # GO HQ in Region	0.17	5.7	5.7	7.6	8.6	9.1	8.6	10	9.1	10
# Different MACOMs in Region	0.03	0	0	0	0	1.3	10	1.7	1.3	10
Multi-dimension Span of Control	0.17	5.3	5.2	7.1	8	8.6	8.6	9.4	8.5	10
# Installations in Region	0.08	1.1	1.1	3	4.9	6.5	4.9	10	6.5	10
# Agency Regions Represented in Region	0.02	5.6	4.7	7.3	9	9.6	1.4	10	9.6	10
# Personnel work Assessment per Installation	0.13	7.8	7.3	7.4	8	7.6	8.4	10	0	10
Travel Time Region HQ to Installations	0.09	2	1.3	4.9	6.1	7.3	4.7	10	0	10
Facility Control in Region	0.13	5.7	5.7	7.6	8.6	9.1	8.6	10	0	10
SQ Yds of Roads in Region	0.03	5.7	5.7	7.6	8.6	9.1	8.6	10	0	10
Size of Region Staff	0.03	10	10	8.7	6.5	3.3	6.5	1	0	10
# RA People per Installation in a Region	0.06	9.2	8.6	8.8	9.5	9.5	10	0	0	10
OMA+AHP Budget per RA Staff in a Region	0.01	9.9	9.9	10	10	10	10	0	0	10
Different GSA Regions Represented in Region	0.01	5.8	5.8	8.1	9	10	3.2	0	0	10
# Personnel Work Assessment Function	0.06	10	10	6.8	5.3	4.2	5.3	0	0	10
Total Value Added		5.7	5.5	6.7	7.5	7.8	7.6	8.0	3.7	10

The key results from this quantitative analysis can be seen in Figure 7.3. This figure shows the potential value added graphed against the number of regions in the alternative. The ACA two-region and CONUSA two-region alternatives scored closely so they are represented as only one alternative. Similarly, the current four-region alternative and the 'functional-four' region alternative scored closely so they are represented as one alternative. Recall that in the DC Directors alternative, the limited IMA region personnel focused on only the command and control core function. In the 8-region alternative, the region personnel performed only the first two core functions.

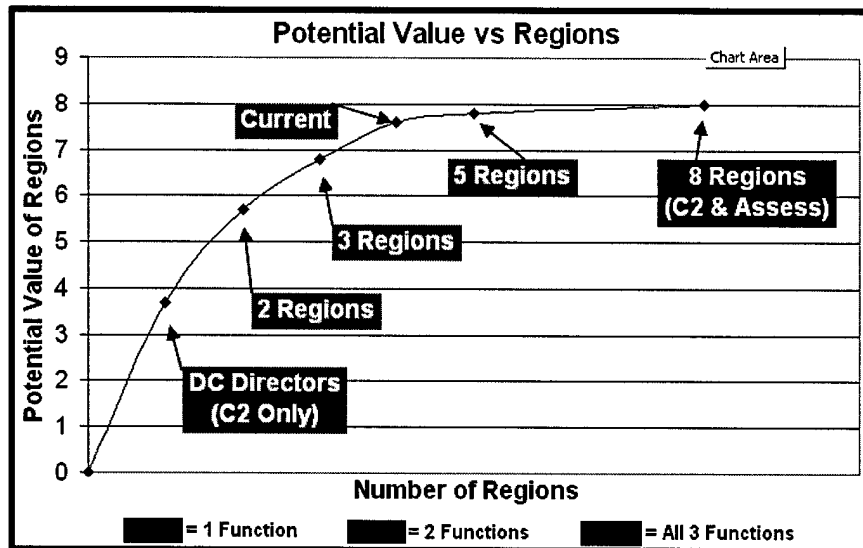


Figure 7.3: Potential Value Added vs. the Number of Regions in Alternatives

There are several insights gained from Figure 7.3. The current structure (4 regions) has *significantly* greater potential value than two or three region alternatives, and *slightly* less potential value than five or eight region alternatives. The curve in Figure 7.3 shows that value added increases fast up to the four region level. After four regions, the rate of gain in potential value added slows considerably. The conclusion is that additional regions add potential value, but at a diminishing rate.

We also looked at the potential value added versus the number of authorized personnel assigned to the regions. Figure 7.4 shows that reducing the number of regions does not significantly lower manpower unless you also reduce functions, based on our assumptions about manpower allocation under various alternatives.

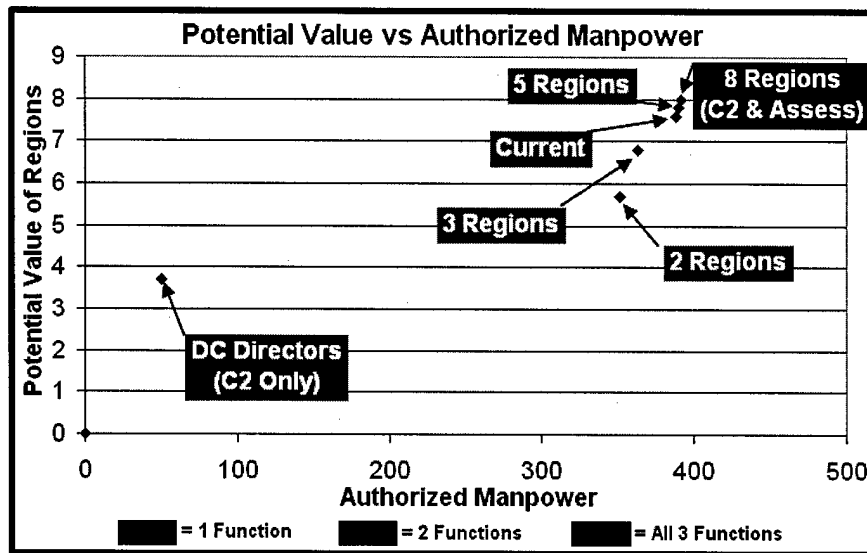


Figure 7.4: Potential Value Added vs. Authorized Manpower

To understand the impact of reducing functions on region capability, we looked at the potential value added versus the functions defined in Chapter 5. Figure 7.5 shows how all six alternatives compare on performing all three core functions, and on each specific core function, in terms of potential value added. Also shown in this figure is an 'ideal' alternative that hypothetically scored perfectly on all measures to provide a benchmark for comparison.

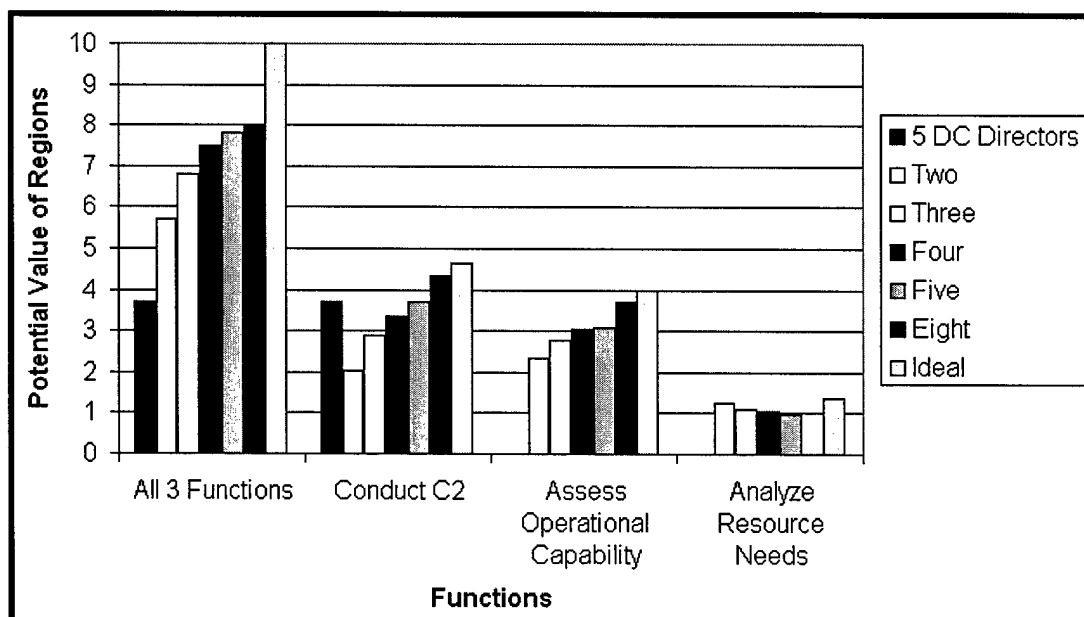


Figure 7.5: Potential Value Added vs. Functions of the Regions

This graphic shows that the analyze resource needs core function accounts for only about 10% of the overall potential value added from an alternative. Recall, however, from Chapter 5 that approximately 30% of a region's required manpower works in this functional area. The presumption is that removing this function from the IMA regions could lead to a 30% savings in manpower with an associated 10% decrement in potential value added.

7.6 Sensitivity Analysis.

In order to evaluate the robustness of our conclusions, we conducted sensitivity analyses on our weighting of the evaluation measures and on the shapes of our value curves. The goal of these analyses was to determine if realistic changes to either would affect our conclusions. Since our conclusions were based upon the shape of the potential value-added versus number of regions curve (Figure 7.3), we focused on that aspect.

Specifically, our conclusions depend upon certain characteristics of the curve. Its shape is concave, with the current, 4 Region alternative at the "knee" of the curve. Moving from the 4 Region alternative in the direction of increasing the number of regions, the gain in potential value-added occurs at a slowly-increasing rate (diminishing returns). Moving from the 4 Region alternative in the direction of decreasing number of regions, the potential value-added drops off quickly. We would consider our results sensitive, if, for reasonable changes to the weights or shapes of value curves, the aforementioned features of the curve in Figure 7.3 change significantly enough to affect our recommendation.

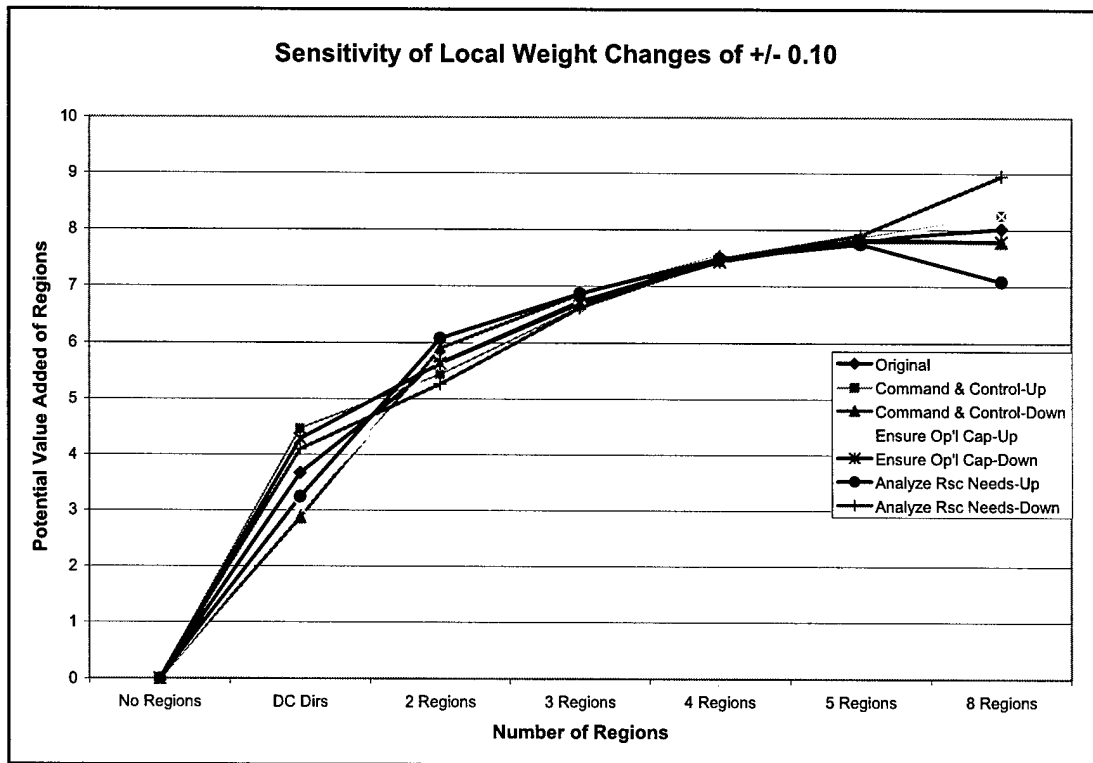


Figure 7.6. Sensitivity of Changes to the Local Weights.

We conducted our sensitivity analyses on the weighting using two distinct methods. In the first, we focused on the local weights of our three core functions and adjusted them individually by changing each of their local weights by plus or minus 0.10. The other, unmodified functional weights would maintain the same proportion of the remaining weight as they had before the adjustment was made. We chose 0.10 because we wanted to ensure that the change would be significant enough to test the boundaries, yet realistic enough to reflect actual possibilities. Changing the local weight for the *analyze resource needs* function by ± 0.10 equates to a 71% change in this core function's local weight relative to the other core functions. Similarly, changing the local weights for the *command and control* and *ensure operational capability* core functions by ± 0.10 equate to a 22% and 25% change in their local weights, respectively. Our analysis led to 6 new curves of potential value-added by number of regions. We plotted those curves, along with the original in Figure 7.6.

As Figure 7.6 depicts, none of the adjustments to the local weights changed the primary characteristics of the curve. The only apparently significant change in the curves occurs at the 8 Region alternative when the *analyze resource needs* function is adjusted. This should be expected, since the 8 Region alternative does not perform the resource function and is therefore punished heavily by increasing the weight of that function and rewarded heavily by decreasing the weight. Since the basic shape of this curve does not change significantly when the weights of the three core functions are adjusted by ± 0.10 , our conclusions are not sensitive to the local weighting of functions.

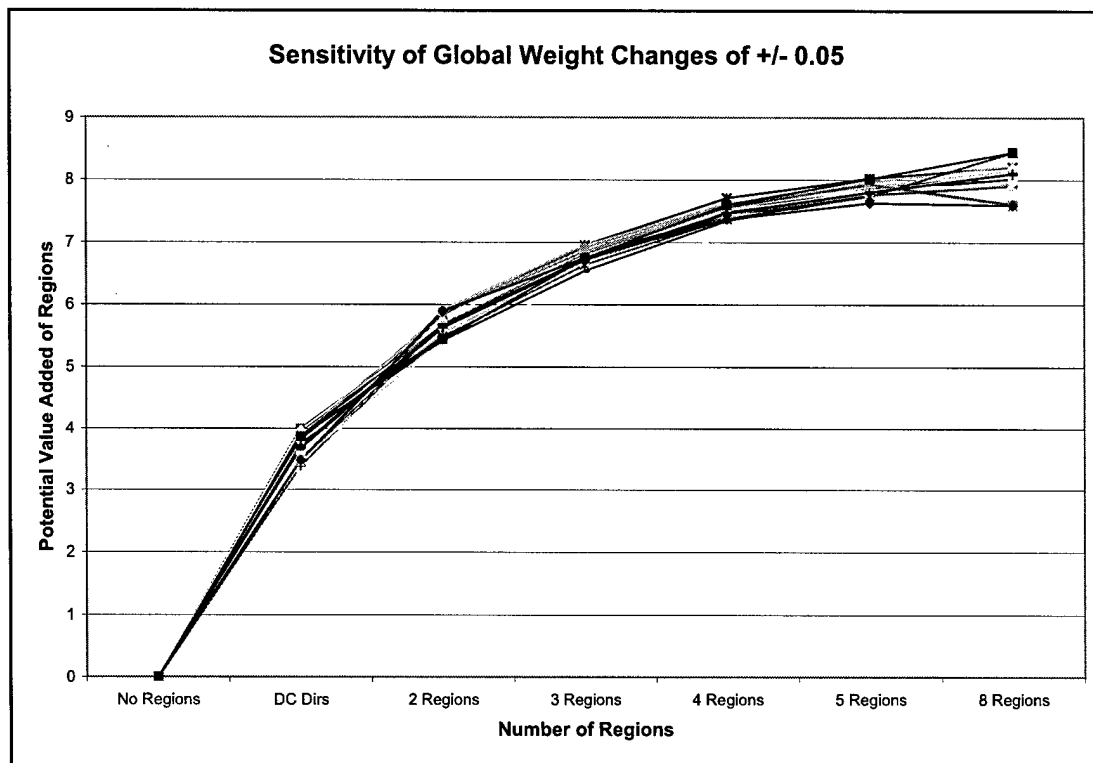


Figure 7.7. Sensitivity of Changes to the Global Weights.

In our second method of assessing the sensitivity of the weights, we focused on the global weights of each of the 14 evaluation measures. Here, our focus was on whether changes to the global weighting of any single evaluation measure would affect our results. We adjusted each individually by changing its global weight by plus or minus 0.05. As before, the other, unmodified global weights would maintain the same proportion of the remaining weight as they had before the adjustment was made. We chose 0.05 for the same reason as discussed above, but reduced it by half since there are 14 evaluation measures with the highest global weight at 0.17. Our analysis led to 28 new curves (two for each evaluation measure) of potential value-added by number of regions. We plotted those curves, along with the original in Figure 7.7. No legend is provided to identify each specific line because individual lines are not important. The key point to take away from Figure 7.7 is that all lines follow the general shape of the curve from Figure 7.3. The consistency of the lines in Figure 7.7 clearly shows that the shape of the curve is not sensitive to changes in the global weights of the evaluation measures.

Our final sensitivity analysis looked at another aspect of potential subjectivity, the shape of the value curves. As discussed before and described in more detail in Appendix A, four of our value curves (used to convert raw data into value scores) are non-linear. The non-linearity is designed to capture decision-maker preferences. However, due to the subjective nature of this assessment, we evaluated if making those curves linear would affect our conclusion. As evidenced by Figure 7.8, making all value curves linear does not alter our conclusions. In fact, the new curve resulting from making all value curves

linear strengthens our conclusions, since the potential value-added of the 8 Region alternative actually dips below that of the 5 Region alternative.

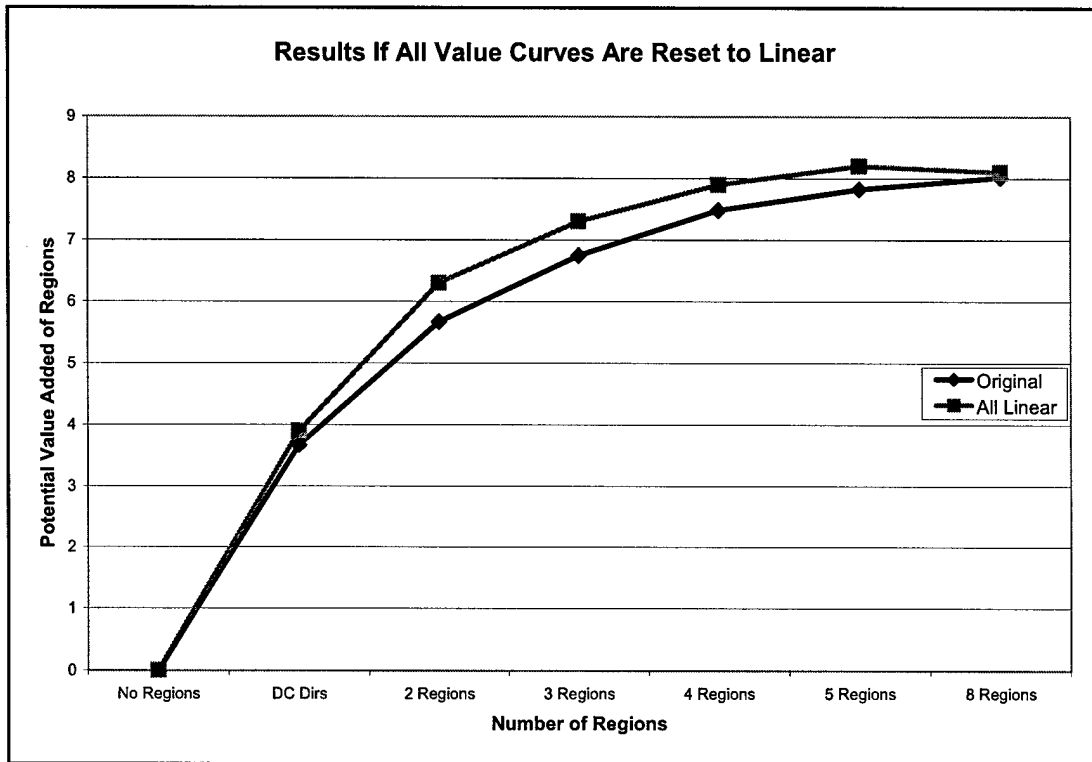


Figure 7.8. Sensitivity of Value Curve Non-linearity.

As a result of the above analyses, we conclude that changes to the weighting and to the shapes of the value curves do not significantly affect our results, given our assumptions.

7.7 Conclusions from Comparing Design Alternatives.

The analytical framework used to compare alternatives led to some specific conclusions:

- If the IMA CONUS Regions continue to perform all three core functions, i.e. C2, Assessment, and Resource Analysis with the current authorized strength, then the:
 - potential value added of a 5-Region structure approximately equals that of the current 4-Region structure.
 - potential value added of the current structure is more than that of a 3-Region structure, which is significantly more than that of 2-Regions.
- If the regions perform only the C2 and Assessment core functions, this can be done with an approximate 30% saving in authorized manpower while yielding a 10% decrement in potential value added based on our model.
- If the regions only perform the command and control core function, this can be done with about 50 people centralized with the IMA HQ in DC.

Chapter 8. Conclusions and Recommendations

8.1 Summary of Study Results.

The ASA(I&E) and the ACSIM asked USMA to provide an analysis of the IMA region management structure that they can use during the next meeting of the Installation Management Board of Directors (IMBOD) in October 2004. The purpose of the USMA study was to evaluate the effectiveness and efficiency of the current structure and provide recommendations for potential alternative structures. The scope of this study was limited to an organizational review of the HQ IMA and Regions structure and does not extend to the execution of installation management functions at the garrison level.

The study methodology included conducting several stakeholder interviews, performing functional and comparative analyses, and developing a quantitative analysis model to evaluate the potential value added from various alternative organizational designs. The study evaluated eight different organizational design alternatives using the quantitative model to gain insights.

Stakeholder analysis of senior leaders from Garrison through HQDA level yielded many interesting observations. These are the key points learned through this process:

- Opinions from Senior HQDA leaders to Garrison Commanders vary widely on the current value added of the IMA Regions to the IM process, from positive to negative.
- IMA is a new organization implemented in a transforming Army at war and so it needs time to mature as an organization. The Army is experiencing some difficulties with the current command and control structure for IM, however this is expected in any major organizational change that significantly impacts the resource decision making process.
- Regions need to develop their staff expertise to accomplish their mission.
- IMA needs a transparent resource allocation process that will enable better communication for resource decisions from HQDA through installation level.
- There is concern over the need for a Region Headquarters that lacks resource decision-making authority.
- Policies concerning the movement and allocation of GWOT funding between Mission and BASEOPs accounts needs review by HQDA.

- Installations are concerned that the rigid application of IMA policy and procedures without some flexibility to adapt to local needs and environment will decrease IM effectiveness and efficiency.

Comparative analysis with both military and industry organizations with similar missions led the team to three main conclusions:

- IMA is a new organization and is early on the maturation curve with regard to its organization and its operating procedures. Air Force installation management is embedded in a decades-old operating model. The Navy is evolving its regionalized installation management procedures from the bottom up, using the Southwest Region as a test bed for new initiatives before launching them Navy-wide. The mission of each service also directly influences the mode of integration between installation management and operational force command structures.
- Corporations adopt regionalization of equivalent functions primarily in order to maintain close relationships with customers. This is a span of control issue directly related to the IMA region director "focused lens" role. Typically, corporate headquarters personnel enforce corporate standards and other auditing functions directly rather than through regional staff, except for those standards which directly relate to customer service and customer satisfaction.
- Corporations achieve cost efficiencies and wider spans of control through regionalization as a result of extensive business process re-engineering and the deployment of supporting information technology. Re-engineering allows corporations to deploy their personnel in more "added-value" functions, reducing headcount and expense previously required for local and regional collection and analysis of data. Note that it is **not enough to automate previous business processes** – the most significant efficiencies are gained by rethinking the service provision model and then automating the resulting desired processes.

Using an analytical framework with a quantitative model to evaluate several alternative designs for an IMA Region organization led to some specific observations:

- If the IMA CONUS Regions continue to perform all three core functions, i.e. C2, Assessment, and Resource Analysis with the current authorized strength, then the:
 - potential value added of a 5-Region structure approximately equals that of the current 4-Region structure.
 - potential value added of the current structure is more than that of a 3-Region structure, which is significantly more than that of 2-Regions.
- If the regions perform only the C2 and Assessment core functions, this can be done with an approximate 30% saving in authorized manpower while yielding a 10% decrement in potential value added based on our model.

- If the regions only perform the command and control core function, this can be done with about 50 people centralized with the IMA HQ in DC.

From these general study results, the team focused the conclusions and recommendations to a few key areas.

8.2 Conclusions.

The study team developed a few key conclusions from this analysis:

- ***IMA is a new organization implemented in a transforming Army at war***
 - Region Directors understand their role to support the SMC/ICs.
 - Regions need to develop their expertise to accomplish their mission
 - IMA should undertake a business process review, linked with a detailed information technology requirements and capabilities review, to insure functions are aligned with manpower allocation and decision-making authority.
 - The desired for standardization at the installation level may harm the effectiveness and efficiency of IM if garrisons have no flexibility to adapt certain IMA policies to the operating realities of their installation.
- ***The core functions of the IMA regions are command and control for installation management, ensuring installation operational capability, and analyzing installation resource needs***
 - C2 is essential.
 - Assessment has potential value IF region personnel build expertise.
 - Resource analysts without dollar authority have limited impact because garrisons perceive regions as a bureaucratic layer.
- ***Several alternative structure were evaluated based on Potential Value Added of Regions vs. Authorized Manpower***
 - If performing all three core functions (C2, Assessment, and Resource Analysis) as currently with the 388 authorized personnel,
 - The potential value of 5 regions \approx 4 regions > 3 regions >> 2 regions.
 - C2 and Assessment functions could be done with 30% saving in authorized manpower;
 - Creates a 10% decrement in potential value.
 - The C2 function alone could be done with about 50 people in DC.

8.3 Recommendations.

The bottom line recommendations from the study are:

- Retain the current four CONUS region structure.
- To achieve any needed manpower savings, reduce the number of personnel working resource analysis functions on the Region staffs.
- IMA needs to develop a transparent resource allocation process that will enable better communication between HQDA, HQ IMA, senior mission commanders and garrisons.

8.4 Suggestions for Future Analysis.

The study team believes IMA could significantly benefit from continued analysis in these areas:

- A detailed business processes review incorporating a review of information technology requirements and capabilities.
- Review the resource allocation decision-making AND communication process to ensure they are transparent and open to all concern constituencies.

Appendix A. Details on Measures of Effectiveness

The following appendix provides the details for each evaluation measure. Each slide provides the name and definition of the measure, the objective it is trying to measure, its global weight, the type of measure and the shape of the value curve for converting raw data scores to value measures. Additional information is provided for some measures.

Weighted Number of General Officer Headquarters in Region

Objective: Maximize responsiveness to SMCs

Definition: Summation of the total number of stars in a region, averaged over all the regions in the alternative (lower is better)

Global Weight: 0.17

Type: Proxy, constructed

Value Curve: Linear

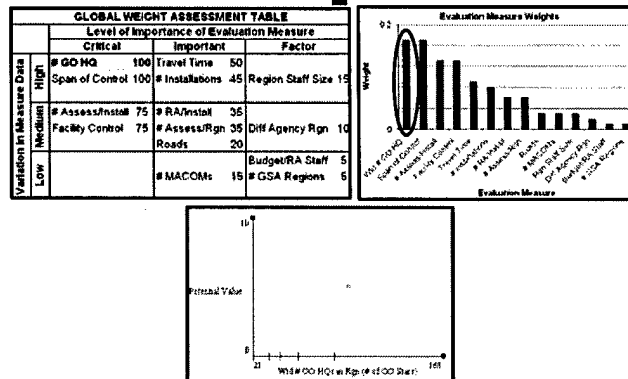


Figure A.1: Weighted Number of GO Headquarters in Region

During interviews of the Region Directors (RD), it was apparent that coordinating IM issues with SMC/ICs was a significant role of the RD. The study team used the number of general officer HQs in the region, weighted by the level of flag-rank, as a proxy to measure the responsiveness of the RDs to SMC/ICs. The fewer the weighted number of GO HQs in a region, the more responsive the RD could become.

Number of Different MACOMs in Region

Objective: Maximize responsiveness to SMCs

Definition: Number of different MACOM types (AMC, FORSCOM, TRADOC, Other) represented in a region, averaged over all the regions in the alternative
(lower is better)

Global Weight: 0.03

Type: Proxy, natural

Value Curve: Linear

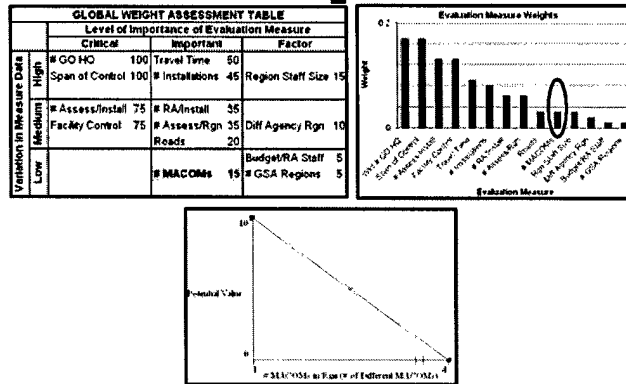


Figure A.2: Number of Different MACOMs in Region

We also used the number of different MACOMs represented within the region as a proxy measure of the responsiveness of RDs to SMC/ICs. We postulated that the fewer the number of different MACOMs RDs had to coordinate with, the more responsive the regions could become.

Constructed Multi-dimension Span of Control

Objective: Maximize capability to lead garrisons

Definition: Summation of eleven span of control indicators (normalized to a value between 1 and 10) weighted by Region Director input, averaged over all the regions in the alternative (higher is better)

Global Weight: 0.17

Type: Direct, constructed

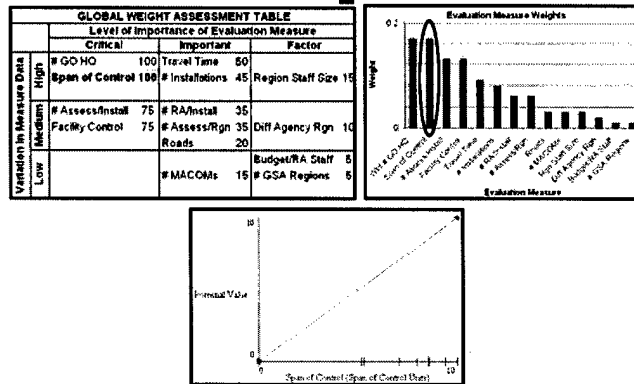


Figure A.3: Multi-dimension Span of Control

The appropriate 'span of control' for a region was initially defined as the number of subordinate installations. Upon closer study, it became apparent that several factors impacted a region's ability to lead assigned garrisons. The team surveyed RDs and arrived at the factors listed in Table A.1, along with their relative importance in contributing to the appropriate span of control for a region.

Table A.1: Span of Control Factors

Factor impacting ability to lead Garrisons	Weight of the Factor
Number of Direct-Report Installations	13.2%
Number of Special Installations	9.0%
Travel time required to visit installations	10.2%
Total Size of OMA and AFH budgets allocated to installations in region	9.4%
Total # of people (soldiers, civilians, family members) supported by installations in region	8.6%
Total # of Different MACOMs represented in region	7.1%
Total # of General Officer (GO) HQs in region	11.3%
Number of power projection platforms (PPPs) and power support platforms (PSPs) in the region	12.4%
Total area of facilities	6.8%
Total acreage	5.6%
Number of installations with surety programs	6.4%

Number of Installations in Region

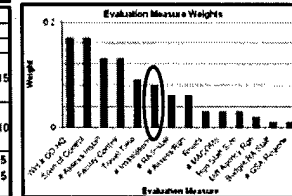
Objective: Maximize capability to understand and articulate installation issues to IMA HQ

Definition: Number of installations in region, averaged over all the regions in the alternative (**lower is better**)

Global Weight: 0.08

Type: Proxy, natural

GLOBAL WEIGHT ASSESSMENT TABLE					
Level of Importance of Evaluation Measure					
		Critical	Important	Factor	
Variation in Measure Data	High	# GO HQ Span of Control 100	Travel Time 50 # Installations 45	Region Staff Size 15	
	Medium	# Assess/Install Facility Control 75	# RA/Install 35 # Assess/Rgn 35	Diff Agency Rgn 10	
	Low		Roads 20	Budget/RA Staff 5 # GSA Regions 5	



Value Curve: Convex (exponentially decreasing).

Understanding and articulating installation issues becomes significantly more challenging as the number of installations increase; therefore, the value drops off quickly.

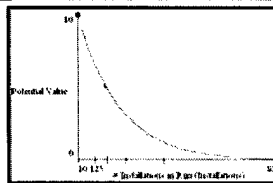


Figure A.4: Number of Installations in Region

Number of Different Major Agency Regions Represented in Region

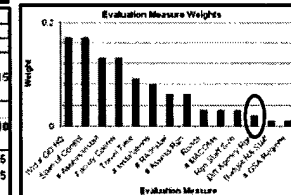
Objective: Maximize capability to coordinate IM issues with outside agencies

Definition: Average number of distinct outside agency regions (ACA, FEMA, USACE, CONUSA, EPA, NETCOM) that fall within the IMA region, averaged over all the regions in the alternative (**lower is better**)

Global Weight: 0.02

Type: Proxy, natural

GLOBAL WEIGHT ASSESSMENT TABLE					
Level of Importance of Evaluation Measure					
		Critical	Important	Factor	
Variation in Measure Data	High	# GO HQ Span of Control 100	Travel Time 50 # Installations 45	Region Staff Size 15	
	Medium	# Assess/Install Facility Control 75	# RA/Install 35 # Assess/Rgn 35	Diff Agency Rgn 10	
	Low		Roads 20	Budget/RA Staff 5 # GSA Regions 5	



Value Curve: Linear

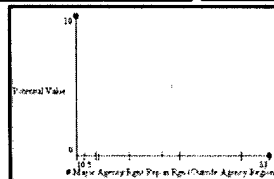


Figure A.5: Number of Different Major Agency Regions Represented in IMA Region

Facility Control in Region

Objective: Maximize capability to enforce standards

Definition: Total number of facilities (buildings, structures, utilities, and land records) on installations in a region, averaged over all regions in the alternative (**lower is better**)

Global Weight: 0.13

Type: Proxy, natural

Value Curve: Linear

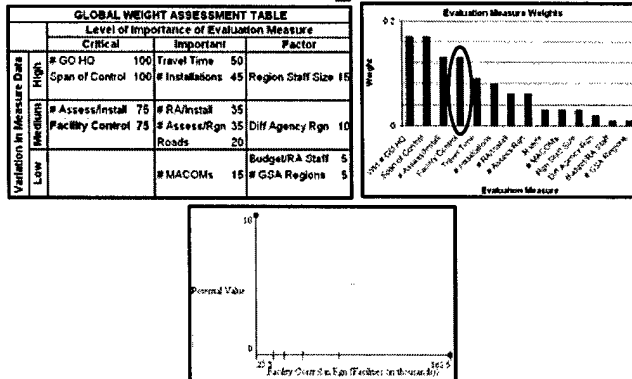


Figure A.8: Facility Control Measure in Region

Total Square Yards of Roads in Region

Objective: Maximize capability to enforce standards

Definition: Total square yardage of paved and unpaved roads summed over all installations in the region and averaged over all regions in the alternative (**lower is better**)

Global Weight: 0.03

Type: Proxy, natural

Value Curve: Linear

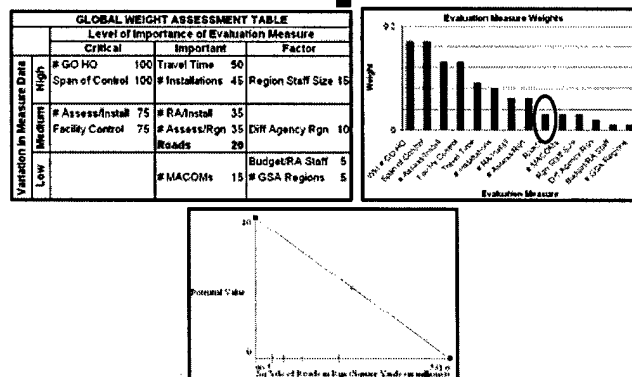


Figure A.9: Total Square Yards of Roads in Region

Size of Total Region Staff

Objective: Maximize the availability of subject matter experts

Definition: Number of authorized personnel in the region staff, averaged over all regions in the alternative (higher is better)

Global Weight: 0.03

Type: Direct, natural

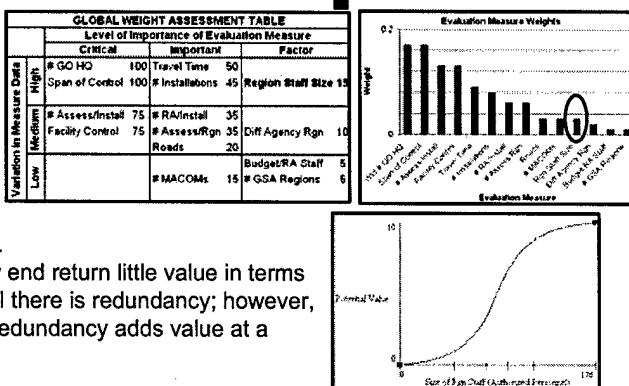


Figure A.10: Size of Total Region Staff

Number of Region Resource Analysis Personnel per Installation

Objective: Maximize region ability to understand installation resource needs

Definition: Number of authorized region personnel designated to perform the RA function divided by the number of installations in the region and averaged over all regions in the alternative (higher is better)

Global Weight: 0.06

Type: Proxy, natural

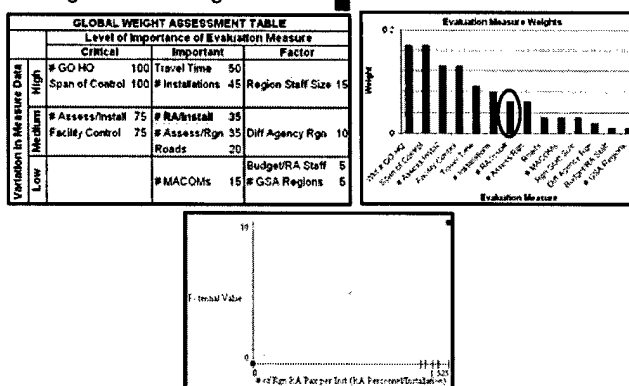


Figure A.11: Number of Region Resource Analysis Personnel per Installation

Size of OMA & AHP Budget per RA Staff Person at Region

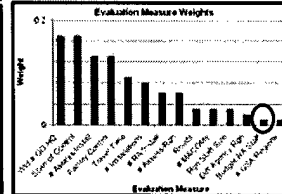
Objective: Maximize region ability to assess and prioritize needs, and make recommendations to IMA HQ

Definition: Combined annual region OMA and AHP budget divided by the number of authorized RA staff in the region, averaged over all regions in the alternative (lower is better)

Global Weight: 0.01

Type: Proxy, natural

GLOBAL WEIGHT ASSESSMENT TABLE				
Level of Importance of Evaluation Measure				
		Critical	Important	Factor
Variation in Measure Data	High	# GO HQ 100	Travel Time 50	# Region Staff Size 15
		Span of Control 100	# Installations 45	
	Medium	# Assess/Install 75	# RA/Install 35	# Diff Agency Rgn 10
		Facility Control 75	# Assess/Rgn 35	
Low			Roads 20	# Budget/RA Staff 5
			# MACOMs 15	
				# GSA Regions 5



Value Curve: Convex (exponentially decreasing).

As the size of the budget increases, the staff's ability to analyze it decreases, especially with extremely large budgets; therefore, the value drops off quickly given this very large range of budget values.

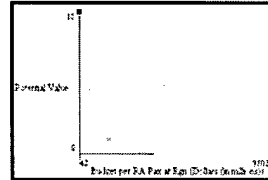


Figure A.12: Size of OMA & AHP Budget per Resource Analysis Staff Person at Region

Number of Different GSA Regions Represented in the IMA Region

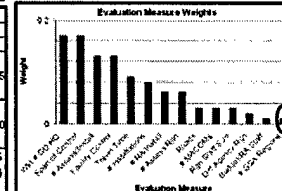
Objective: Maximize region chances of generating multi-installation efficiencies

Definition: Number of the overlapping GSA regions within the IMA region, averaged over all regions in the alternative (lower is better)

Global Weight: 0.01

Type: Proxy, natural

GLOBAL WEIGHT ASSESSMENT TABLE				
Level of Importance of Evaluation Measure				
		Critical	Important	Factor
Variation in Measure Data	High	# GO HQ 100	Travel Time 50	# Region Staff Size 15
		Span of Control 100	# Installations 45	
	Medium	# Assess/Install 75	# RA/Install 35	# Diff Agency Rgn 10
		Facility Control 75	# Assess/Rgn 35	
Low			Roads 20	# Budget/RA Staff 5
			# MACOMs 15	
				# GSA Regions 5



Value Curve: Linear

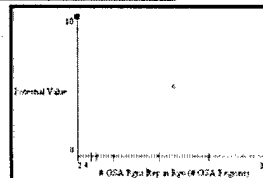


Figure A.13: Number of Different GSA Regions Represented in the IMA Region

Number of Region Assessment Personnel

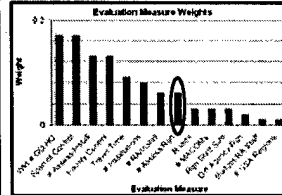
Objective: Maximize region chances of generating multi-installation efficiencies

Definition: Number of authorized personnel performing the assessment function on the region staff, averaged over all regions in the alternative (**higher is better**)

Global Weight: 0.06

Type: Proxy, natural

GLOBAL WEIGHT ASSESSMENT TABLE					
Level of Importance of Evaluation Measure					
Variation in Measure Data	Critical		Important		Factor
	# GO HQ	100	Travel Time	50	Region Staff Size 15
	Span of Control	100	# Installations	45	
	# Assess/Install	75	# RA/Install	35	
Medium	Facility Control	75	# Assess/Rgn	35	Diff Agency Rgn 10
			Roads	20	
Low			Budget/RA Staff	5	
			# MACOMs	15	# GSA Regions 5



Value Curve: Linear

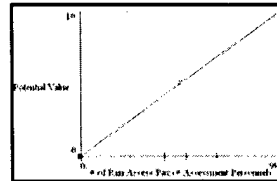


Figure A.14: Number of Region Assessment Personnel

Appendix B. Sample O&O Document for Service 23 (Provide Ammunition Supply Services)

HQDA PROPONENT DETAILED ORGANIZATION AND OPERATIONS (O & O) TRANSFORMATION INSTALLATION MANAGEMENT

VERSION DATE: (September 13, 2002)

I. Major Service Activity Name (SBC):

Service Function Name/Title and SBC Number: Ammunition Supply Services (#23)

Service/Program/Mission: Provide installation retail ammunition supply services (receipt, storage and issue) to customers to include Quality Assurance Specialist (Ammunition Surveillance) (QASAS) and Explosive Safety support. [Does not include Ammunition Supply Point (ASP) or Ammunition Transfer Points (ATP) operated within USAREUR, USARPAC, and EUSA.]

HQ DA Proponent: LTC Campbell, DSN 224-3770, DALO-SMA,
paul.campbell@hqda.army.mil

II. Installation Level:

Garrison Command Functions:

- Operation of Ammunition Supply Point (ASP) or Class V Supply Support Activity (SSA) [Storage, Issue, Receipt, Unit Turn-Ins, Residue, Security, Surveillance, Accountability (SAAS-MOD administration), and Explosive Safety of assets]. Munitions Rule Compliance.
- Provide stockpile management services and maintain unit basic and/or operational loads.
- Compliance with DA Policy on reporting Installation or unit operational loads/Force Protection assets through SPBS-R to SAAS-MOD MMC (MACOM) to Worldwide Ammunition Reporting System (WARS).
- Compliance with Standard Army Ammunition System reporting to WARS
- Compliance with Training Ammunition Management System (TAMS).
- Reporting to Training Ammunition Management Information System (TAMIS) and Worldwide Ammunition Reporting System-New Technology/Guided Missile Large Rocket System (WARS-NT/GMLR).

Define Pacing Measures (These pacing measures are subject to replacement by a yet to be approved set of standard level of service):

- Primary – Installation Status Report Performance Measures [23-01 through 23-04]: (23-01) -- Percent of valid issue/turn-in coordinated appointments supported on the date requested when established standards for support are followed (23-02) -- Percent of lines that are in excess to the installation's needs and/or

unserviceable that have requests for disposition submitted (Average monthly percentage based on total excess and unserviceable lines on hand on the 15th of each month) (23-03) -- Valid ammunition supply demands (23 - 04) – Percentage of corrected safety inspection discrepancies.

- Alternates – (1) Number of Total short tons processed in a year (received, warehoused, re-warehoused, issued, unit turn-ins, inventories, inspections, demilitarization and residue processed) and annual dollar value of assets. (2) Total number of transactions processed and number of DODICs, lots and short tons stored in a year.
- Documentation: Garrison TDA, MOA/MOU unique to the installation.
- Units/Activities the service/program supports: AC, USAR, NG, other Services, other federal agencies, tenant units/activities from nearby geographic locations, and training on or near installations.

Senior Mission Command Functions: None.

III. Regional Level:

Functions Performed by the Region/Staff [No QASAS support Function]:

- CONUS - Oversight of retail ammunition supply services as conducted by ASP or Class V Supply Support Activities (SSA) within Region, in coordination with MACOMs.
- Development and Compliance of Standard Levels of Service (SLOS) for the ASPs.
- Processing of U.S. Code Title 10 Waiver Requests.
- Oversight of Munitions Rule and Environmental Compliance.
- Compliance with Power Projection Platform Requirements.
- Validation and Prioritization of MCA Projects
- Review and input of A-76 Studies.
- OCONUS – The MACOM (USARPAC, USAREUR, and EUSA) will provide oversight function.

Service Functions Required by the Region: Customer of ASP.

Provider of Services to the Region: Host installation or per agreement.

Manpower spaces required: 1 each Ammo Specialist.

Where does the space come from: Spaces generated from "scrubbing" of MACOM's TDA.

IV. HQ IMA:

Functions Performed by the HQ IMA/Staff: N/A

Service Functions Required by the HQ IMA: N/A

Provider of Services to the HQ IMA: N/A

Manpower spaces required: N/A Where do the spaces come from: N/A

V. Proponent FOAs:

FOA Name: N/A

Functions Performed: N/A

VI. Proponent ARSTAF:

Division Name: Directorate of Sustainment, Munitions Division, DALO-SMA

Functions Performed:

- Exercise General Staff Supervision over Planning, Programming, Budgeting and Execution to support readiness for OMA Conventional Ammunition Stockpile Management; Toxic Chemical Storage and PAA conventional ammunition demilitarization programs.
- Develop Policy and Direct Distribution of the Army's Munitions Stockpile
- Develop Policy for Ammunition Stockpile Reliability Programs
- Develop Policy for Logistics Assistance Review Program
- Develop Policy for Ammunition Peculiar Equipment Program
- Develop Policy for Ammunition Stockpile Management functions
- Develop Policy for Ammunition Surveillance and Environmental Compliance
- Chair Committee for Ammunition Logistics Support (CALs) IAW AR 700-28 (Committee for Ammunition Logistics Support) and CALs Charter.

VII. Proponent Secretariat:

Office Name: ASA, ALT

Functions Performed: No Change

VIII. Other Offices/Agencies:

Office Name: The U. S. Army Defense Ammunition Center (per AR 700-13)

Functions Performed:

- Conduct on-site reviews, study assessments, and other logistics support actions directed by HQDA (DALO-SMA).
- Provide technical assistance to commands, activities and installations.
- Provide review and assistance in development of plans for construction or modification of ammunition facilities for handling, storing, maintaining, demilitarizing/disposing, or testing of ammunition and explosives.
- Initiate systemic improvements relative to all ammunition logistics functional areas.

- Identify requirements for standard design of ammunition facilities, develop design requirements, and coordinate with installations, commands, and design activities.
- Provide an annual program in-process review (IPR) to HQDA (DALO-SMA) and periodic IPRs as requested to applicable MACOMs.

Method of Delivery:

- Formal report and IPR.

IX. MACOM HQ:

Functions Performed by the MACOM HQ/Staff:

- Justification, forecasting, requisition and stockage objectives of Ammunition Basic Load, Training Ammunition, Operational Load and War Reserve Stocks.
- Compliance with DA Policy on reporting unit basic load through the SPBS-R to MACOM, SAAS-MOD MMC.
- Compliance with Standard Army Ammunition System reporting to WARS until a viable alternative (i.e., consolidated system at OSC) has been selected, developed, tested and implemented.
- Input to Worldwide Ammunition Reporting System – New Technology (WARS-NT/GMLR).
- Compliance with TAMS
- Oversight of TAMIS.
- Serves as a resource for subordinate units on questions of ammunition supply. Acts as a conduit between the wholesale and retail level of supply for ammunition. Coordinates with item managers for the delivery and release of ABL.
- Reports on the availability of preferred ammunition items. Works issues of supply availability, retrofit and production. Coordinates with DA ammunition staff and subordinate staff on ammunition supply policy. Oversees the development and modification of the Ammunition Basic Load Computations System (ABLCS).
- In-transit visibility implementation, reporting, and support.
- Develop and coordinate functional management of the surveillance program.
- Operation of Theater SAAS and conduct of theater-level munitions management functions (USARPAC and USAREUR).
- QASAS support to the MACOM and to CONUS regions [as outlined in a revised AR 5-9 (Area Support Responsibilities) and based on MOAs between MACOMs and CONUS regions].
- Oversight of the Ammunition Surveillance and Stockpile Reliability Program (ASRP) and the Ammunition Surveillance Modernization Program (ASMP) IAW AR s 740-1 (Storage and Supply Activities Operations), 702-6 (Ammunition Stockpile Reliability Program) and 702-12 [Quality Assurance Specialist (Ammunition Surveillance)].

Service Functions Required by the MACOM HQ:

- Coordinate with and between Installations, Regional Commands, and other MACOMs as required.

Provider of Services to the MACOM HQ: MACOM Support Agreement Manager.

Manpower spaces required:

- TRADOC -- 1 ea GS-0346 Ammunition Manager; 1 ea GS-1910 Quality Assurance Specialist (Ammo). FORSCOM -- TBD. Where do the spaces come from: TRADOC (Class V Section). FORSCOM: TBD.

Special Instructions:

- Ammunition Support Agreements must address the following (but not limited to):
- Document specific support provided:
- Reimbursement of costs between installations, Regions or MACOMs. MOA for QASAS support CONUS MACOMs and regions.

Regulations Requiring Change:

- AR 5-9 (Area Support Responsibilities) and AR 700-13 (Worldwide Ammunition Review and Assistance Program). Other regulations: TBD.

Distribution List

The following organizations and individuals will receive copies of this study report from the USMA study team:

NAME/AGENCY	ADDRESS	COPIES
Author(s)	Department of Systems Engineering Mahan Hall West Point, NY 10996	2
Mr. Geoff Prosch ASA(I&E)	Assistant Secretary of the Army for Installations and Environment (ASA(I&E)) 110 Army Pentagon, Room 3E464 Washington, DC 20310-0110	2
Major General Lust ACSIM	Assistant Chief of Staff, Installation Management (ACSIM), HQDA 600 Army Pentagon Washington, DC 20310-0600	2
Major General Johnson Director, IMA	Director, Installation Management Agency (IMA) Presidential Towers, Room 12194 Crystal City, VA.	1
Mr. Sakowitz Deputy Director, IMA	Installation Management Agency (IMA) Presidential Towers, Room 12194 Crystal City, VA.	1
Mr. Donald Tison	Office of the Army G8 HQDA, The Pentagon, Room 3C718 Washington, DC 20310-0200	1
Dr. Craig College ASA(I&E)	ASA(I&E) The Pentagon, Room 3E464 Washington, DC 20310	1
Mr. Scott Dias HQ Plans, IMA	Office of Plans Installation Management Agency (IMA) Presidential Towers Crystal City, VA.	2

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BG Kaufman Dean, USMA	Office of the Dean USMA Building 600 West Point, NY 10996	1
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COL McGinnis Department Head-DSE	Department of Systems Engineering Mahan Hall West Point, NY 10996	1
ORCEN	Department of Systems Engineering Mahan Hall West Point, NY 10996	5
LTC Mike Kwinn ORCEN Director	Department of Systems Engineering Mahan Hall West Point, NY 10996	1
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⁶ Official US Navy web sites accessed during the period 20 Jun – 12 Jul 2004, <http://www.cni.navy.mil/> and associated pages, <http://www.cnrsw.navy.mil/> and associated pages.

⁷ Insights gained for industry comparisons from email correspondence with Exel official, Jun 21, 2004, teleconference with Hilton corporate officials, Jul 16, 2004, and teleconference with government relations office of Walmart, Aug 9, 2004, and with a Walmart district manager, Aug 9, 2004.

⁸ Prosci's 2004 Call Center Study results: span of control ranges from 16:1 to 8:1, depending on the industry and the type of center; See: <http://www.call-center.net/benchmarking.htm>

⁹ Role of Information Technology in business process re-engineering: The seminal work was done by Michael Hammer and James Champy. See, as an example, the study done by MBA and Management Science students at Baruch College (City University of New York) : <http://www.netlib.com/bpr1.html>.

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